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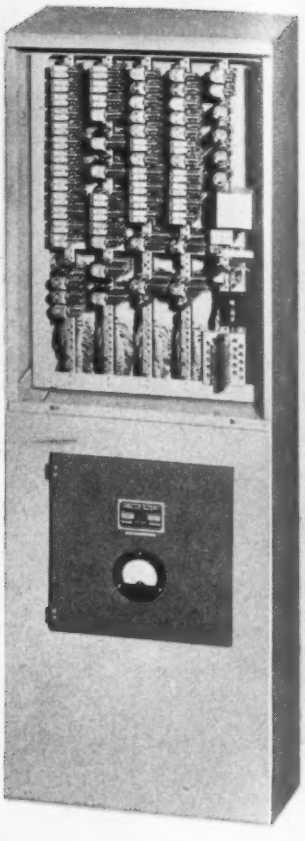

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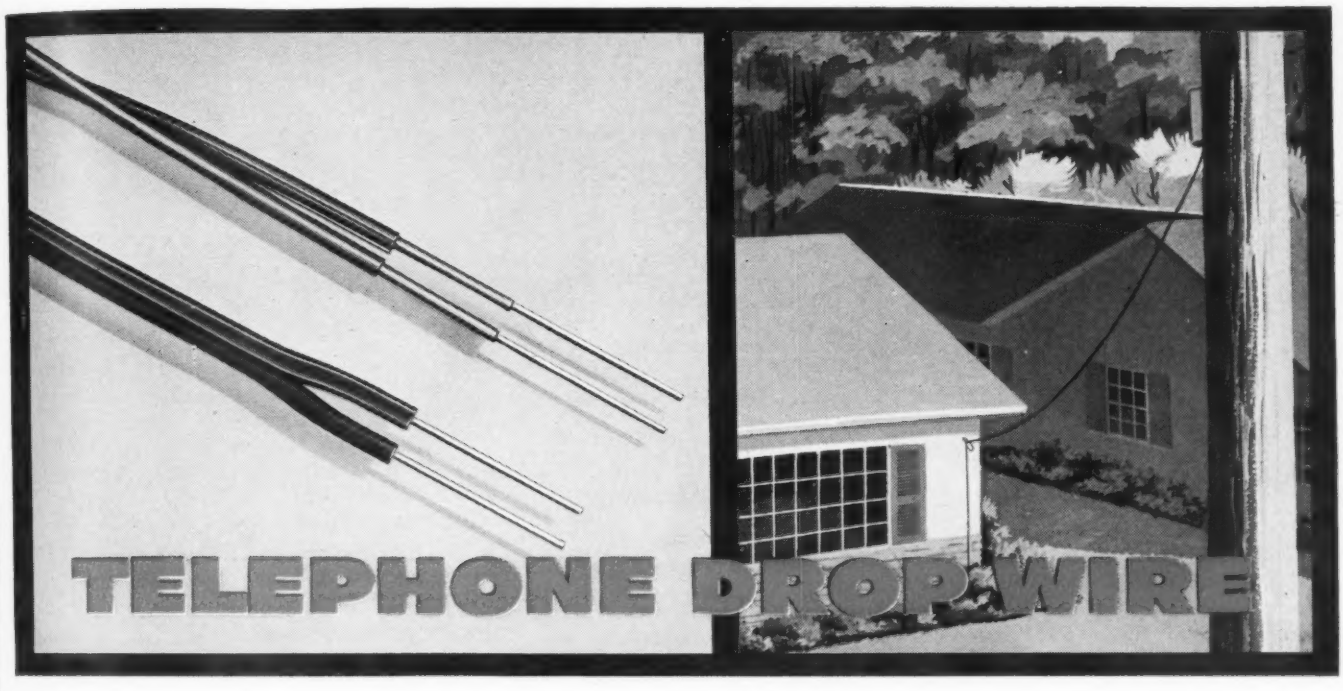

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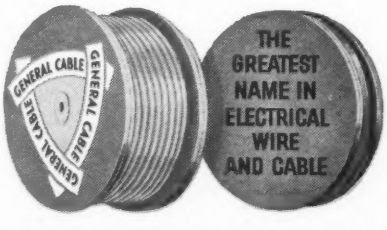

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FLASHES AND PLUGS

STOP THE MUSIC. Two New York City fathers discussed the telephone customs of teen-age daughters recently. "Does yours do her homework on the telephone?" one father asked.

"Homework!" snorted the second father. "Mine plays the viola. She and some friend both started in the school orchestra this fall. They keep in touch with each other's practicing over the telephone."

Father No. 1 could even top that story. (This conversation really did take place, and a check of a few other fathers by an eavesdropper to the first conversation showed the two men were not exaggerating.)

The topper was an exasperated description of record playing, teen-age telephone style. Seems this father's neighborhood is the scene of frequent telephone calls to let friends hear the latest jazz record in some teen-ager's collection. "Lately they've started playing a record several times in one telephone call and singing along with it," he said.

•

HASTY EXIT. "I'd like to report that someone broke into my residence and stole three gallons of moonshine whisky," the male voice informed the sheriff's radio operator on the telephone, down in Pensacola, Fla.

The operator tried twice to get the caller's name and then said:

"Well, listen to me, then. Don't you know it's against the law even to have moonshine whisky in your possession? You could go directly to jail if we knew who you were."

"Well, now," the man replied, "if that's the case, I'd just as soon forget about the whole thing." He hung up.

•

HORSE AFIRE. The telephone rang in the fire station in Henderson, Ky., and an excited voice shouted:

"Come quick. A horse is on fire!"

"What did you say?" the surprised fireman asked.

He had not misunderstood. The voice repeated the request:

"It's a wooden horse marking a hole in the street."

Firemen extinguished the blaze in routine fashion.

•

TASTY TRIBUTE. "You can't do this to me," the man howled as the cannibal king prepared the boiling kettle. "I'm an important man. I work for a magazine."

"You editor?"

"Assistant editor."

"Well," replied the cannibal king, "I make you editor-in-chief."

CIRCULATION

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Since 1901

November 19, 1955

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IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR

Cites two rate cases exhibiting departure from strict original cost basis. Novel opinion on automation advanced. FCC to open files for Senate committee investigation.

THE United States Supreme Court on Nov. 7 took a negative action (refusal to review) in a utility rate case of more than passing interest. The highest court refused to listen to an appeal from a decision of the Wisconsin Supreme Court, using the purchase price of a transit system in Milwaukee as the rate base, even though it was less than the original cost. This departure from a strict original cost basis by the Wisconsin commission created quite a stir when the case was decided by the supreme court last Februrary. What the lower court actually did was to decide that "acquisition cost" (or purchase price) of utility property, rather than the original cost when first devoted to public service (sometimes called "aboriginal cost"), may properly be used by the Wisconsin commission as a basis for the annual depreciation charge.

The case arose in fixing fares for the Milwaukee & Suburban Transport Corp., which at the end of 1952 bought out the Milwaukee transportation system for 10 million dollars, or almost 5 million dollars less than the depreciated original cost of the property. The commission, in determining the annual depreciation charge of $1,200,000 (on the basis of the original cost), ordered a deduction from that allowable expense by the amount ($327,047) which would amortize the difference between the original cost and the purchase price over the life of the property.

The transit company on appeal claimed it was entitled to an annual depreciation allowance based on original cost of the property when first devoted to public service, which would result (under fares then being charged) in a return allowance of only 2.91 per cent. This was said to be confiscatory and called for a fare increase. The commission's use of the actual purchase price paid by the company for the property, however, would lower the depreciation expense so that prevailing fares could yield a return estimated at 7.35 per cent.

The state supreme court, in an opinion written by Judge Currie (7 PUR3d 625), ruled that the commission was justified in limiting the depreciation allowance to a return of the actual investment cost of the plant to the transit company. The loss of the difference in depreciation of the original cost investment was held to have been sustained by the former owner through his voluntary act of selling at a price below depreciated original cost.

The importance of this decision is the court's acknowledgement that the commission would have to follow a consistent rule in applying the same principle to the more common situation of a utility's property purchased (at arm's-length bargaining) at a price in excess of the original cost when first devoted to public service.

The court said: ". . . if the Wisconsin commission is to be consistent with its action in the instant case, it would have to permit deduction of amortization charges to permit recoupment of a premium paid *over and above* depreciated original cost to acquire plant assets of a former operating owner, if it determined the purchase price did not transcend the rule of 'prudent investment.'" The court distinguished its ruling from somewhat contrary decisions by the Federal Power Commission and Pennsylvania courts; and this decision of the Wisconsin Supreme Court has now been permitted to stand by the U. S. Supreme Court as a result of the latter's refusal to grant a review.

Departs from Original Cost

Another recent utility rate case, in which a departure from strict adherence to an original cost rate base was noted, is a decision by the Arkansas commission (dated Nov. 3) granting Arkansas Louisiana Gas Co. an annual revenue increase of $4,300,000 on rates charged 34 large industrial customers. At the same time the commission established two precedents in gas rate regulation which are of more than local interest even to other utility industries: (1) Disregarding original cost figures on gas production, the commission adopted the so-called "fair field price" theory under which the company will get as much for the gas it produces for itself as it pays for the gas it buys from other producers; (2) the commission also allowed an 8 per cent return on the company's investment in facilities serving large industries—a substantial increase over the usual former allowance of 6 per cent.

The company's large industrial customers protested the rate increase and are now expected to appeal the commission's order to the state courts. The commission said that the fair field price theory, while unique in Arkansas, was not a new question since it had been allowed in two cases by the Federal Power Commission. The commission's order said that even with an 8 per cent rate of return on the industrial property, the company's over-all rate of return would not be greater than 6.5 per cent.

In adopting the fair field price theory for Arkansas Louisiana, the commission said it was convinced that this method would best serve the interests of the "domestic, commercial, and small industrial consumers" of the company. Opponents had argued the commission should stick with the customary "rate base" method on gas production by in-

cluding it in the rate base with other properties and allowing the company its expenses and a rate of return.

The Arkansas commission further said it had decided it was time to re-examine its position in regulating natural gas companies because of the recent economic impact on the gas business by heavy demand and because of public interest. "The adoption," the order said, "of the fair field price by this commission for the purposes of this case in no way abandons the traditional rate base approach with a fair and reasonable rate of return for the company on its over-all operations. This commission realizes and accepts its responsibilities to regulate the company and safeguard the interest of all the customers of the company, and it will from time to time examine costs and policies of the company in its gas purchases."

Belief was expressed by the Arkansas commission that "regulated natural gas utilities should be encouraged to explore, develop, and produce a substantial portion of their natural gas requirements" and that any regulation which discouraged this would not be in the public interest. The company had said a cost rate base approach did not give it the incentive to explore for gas and accumulate reserves under the present highly competitive condition of gas production in the Southwest.

Anti-Automation?

We are still hearing talk around Washington about the impact of technical changes on industrial operation, employment opportunities, and future economic trends. The recent hearings of a Joint Congressional Subcommittee on the Economic Report (reviewed in this department, issue of Nov. 5), on so-called "automation" projected the telephone industry, among others, as likely to experience some changes along this line in future years.

It may be of interest therefore to note that at least one world-known scientist has developed what might be called an "anti-automation" attitude. He is Nobel Prize-winning Sir George Thomson of Cambridge, England, who has just outlined his ideas in a new book, "The Foreseeable Future." Sir

(Please turn to page 48)

Three States Get $1,100,000 in REA Telephone Loans

Loans amounting to $1,100,000 were made the week of Oct. 30 by the REA for the improvement and extension of telephone service in rural areas of Kansas, Wisconsin and North Dakota, the U. S. Department of Agriculture announced.

The American Communication Co., Haddam, Kan., was extended an allocation of $655,000, third loan. The company plans to use these funds to expand and improve rural telephone service in Clay, Jewell, Republic and Riley counties in Kansas, and Jefferson, Thayer and Nuckolls counties in Nebraska.

The borrower proposes to use its own money plus loan funds to acquire the following properties: The Esbon Telephone Co., the Green Telephone Co., and the Republic Telephone Co., all in Kansas; the Frontier Telephone Co. serving Chester, Hubbell and Reynolds, and the Byron Telephone Co., both in Nebraska. These facilities are now providing magneto service to 1,373 subscribers over 462 miles of line.

The seven existing central offices will be converted to dial operation, according to present plans, and 97 miles of new line will be constructed. About 245 miles of the present line will be used in the expanded system, 192 miles rebuilt and the remainder retired. The rehabilitation and new construction possible under the REA loan will enable the American Communication Co. to improve service for the present subscribers, and to serve 280 rural families now without telephones in the proposed new area.

REA loans to this Kansas borrower now total $1,001,000. The funds will finance dial service for 2,457 subscribers in north central Kansas and south central Nebraska. Automatic central offices will be located at Courtland, Esbon, Green, Haddam, Morrowville and Republic in Kansas, and at Byron, Chester, Hubbell and Reynolds in Nebraska. When complete, the system will consist of 843 miles of line in eight counties.

Carl Travers is president of the American Communication Co.

*

Vernon Telephone Cooperative, Westby, Wis., on Nov. 3 was extended a loan of $101,000, second loan to this borrower.

The cooperative proposes to use these funds, together with funds from an earlier loan of $525,000, to furnish dial service to 1,043 rural subscribers in Crawford and Vernon counties. This includes 115 existing subscribers and 62 new ones in an area not provided for in the first loan. The borrower plans to acquire the Desota and Genoa exchanges from the LaCrosse Telephone Co. These two exchanges which now provide magneto service would be rehabilitated and integrated into the Vernon system.

Under present plans, the integrated system will consist of 391 miles of line and dial central offices at Liberty Pole, Red Mound and Romance. Ole Treastad is president of the Vernon cooperative.

*

West River Mutual Aid Telephone Corp., Hazen, N. D., on Nov. 4 was allocated the sum of $344,000, third loan.

The cooperative plans to use these funds, together with funds from prior loans, to provide new and improved service to 2,476 rural subscribers in Grant, McLean, Mercer, Morton, Oliver and Sioux counties. Of this total, about 1,100 are families with no telephone service now. The three REA loans to this cooperative total $1,269,000.

Since starting operations, the borrower has acquired and is planning to expand and integrate the facilities of the Beulah Telephone Co., the Stanton Telephone Co., the Turtle Lake Telephone Exchange and the Washburn Telephone Exchange, together with small switcher lines served by each. West River also proposes to acquire the Mercer Telephone Co. and the Hazen Telephone Co., along with local switcher facilities served by the two companies.

Of the total 305 miles of line acquired and to be acquired, West River plans to extensively rebuild and use 226 miles of line in the new system. It will retire the remainder. It proposes to add 692 miles of new line. Automatic central offices for the cooperative will be at Beulah, Hazen, Mercer, Stanton, Turtle Lake, and Washburn. When completed, the system will consist of 918 miles of line in six counties.

Oscar Carlson is president, and D. H. Brooks is coordinator of the West River Mutual Corp.

MANAGEMENT RESPONSIBILITY

in the Telephone Business

*By DONALD C. POWER**

THIS subject of "Management Responsibility in the Telephone Business" is one of very real interest to me for I believe our ability to prosper, to succeed and grow lies in our ability to manage properly.

Of course, many of you probably have a question in your minds as to what a lawyer knows about managing a telephone business and I can assure you I don't know very much. It reminds me of the story of a young lawyer who was called for jury duty before a justice of the peace and objected to serving on the ground that he was a lawyer. The old justice of the peace looked at him and said: "Take your seat in the box—you don't know enough law to hurt."

On the desk of one of my friends in New York is quite a fine picture of a turtle moving as fast as he can, which as you all know isn't very fast. Beneath the picture is a sign which says: "Observe well the turtle—he gets nowhere without sticking his neck out." In talking about management responsibility, I don't want to behave like a turtle, but in discussing this subject I may be sticking my neck out just a little. Anyway, here are some of my ideas about management responsibility.

In my judgment the primary obligation of management is to operate the business at a profit. Of course, as a public service industry, we want to provide the best in telephone service but, unless we operate the business profitably, we are not going to be able to provide good service for very long.

Inflation Means Repricing

When inflation came along a few years ago and caught the telephone business with spiralling costs and fixed rates and a continually declining rate of return, it should have been perfectly obvious to management that something had to be done—and, assuming we were operating our business as economically as possible, our only solution was to reprice our product the same as all other businesses were doing.

In spite of this obvious need, we found many of our management people reluctant to proceed with the necessary rate proceedings. They were afraid of the commissions, they were afraid of public reaction, they were just not happy about any part of a rate case. I will admit that life is a lot more pleasant if you don't have to raise your prices, particularly through a public proceeding which, more often than not, is adverse in character, but management is paid to manage, not just enjoy the good things of life and, as I said at the outset, its primary obligation is to operate the business at a profit. If you can operate the business at a profit without raising rates in an inflationary era such as we have faced—wonderful—but if you can, you are not only a manager, you are a magician!

In my remarks about the importance of a profitable operation I do not mean to minimize the necessity for good service—as a public utility we are committed to that—but good service can only be provided by a financially successful company and we have certainly had enough illustrations of that in the Independent telephone business to convince us that this is true.

Must Provide Capital

In the public utility business I have observed a tendency on the part of many to assume that capital will always be provided by management because, by and large, it always has been, but it does not follow that it always will be if we fail to operate our business successfully.

In the Aug. 24 issue of *Financial World* which has a picture of Cleo Craig on the front cover, there appears an article entitled "Telephone is America's Most Popular Stock" and, of course, they refer to AT&T stock only. This article discloses that AT&T stock is easily America's most popular stock, with approximately 1.4 million shareholders, nearly three times as many as any other company. Its shares are also widely distributed, with one in every 45 families throughout the country having a direct ownership in AT&T. Of course, in addition, there are many thousands of shareholders of Independent companies.

The article also points out that at 183 AT&T yields 4.9 per cent from the $9.00 dividend which has become a tradition in the world of finance. Can you imagine what would happen to the financial world if, for some reason or another, the Bell System failed to operate profitably and had to reduce this dividend? When you think of such a catastrophe you can readily see the responsibility of management to see that such a situation does not occur.

Today, in America, the whole approach to management has become much broader than in the past. There are new concepts of management, many of them broader than we have ever had to face previously. We must develop managers who can recognize these responsibilities with which business is now charged in addition to their other functions of running the business itself. And so I believe we must teach our management people how they must face the problems of tomorrow, how they will manage the business in the years ahead rather than instructing them in how we did the jobs in the years past.

Future is Important

Ralph J. Cordiner, president of General Electric, has had this to say about developing people to manage:

"There has been a growing realization in American industry that great untapped opportunities lie in finding ways to develop more fully our human

*Mr. Power is president of General Telephone Corp. He gave this address before the Commercial Management Conference of the Ohio Bell Telephone Co. on Sept. 15.

resources—particularly the managers of our business enterprises.

"The concept of the back-up for top management jobs overlooks the fact that the most important decisions regarding tomorrow's management are made long before a man is promoted to a senior position.

"Tomorrow's senior positions will be filled by men who today occupy junior positions. It is the appointing people to junior positions that is crucial. And in making these decisions the typical back-up planning helps us little, if at all."

Peter F. Drucker, well known business writer, in his book entitled, "The Practice of Management," carries the idea even further and I think he hits the nail on the head. Mr. Drucker has this to say:

"Management must never aim at replacing what is today—today's managers, their jobs, or their qualifications. It must always focus on the needs of tomorrow. What organization will be needed to attain the objectives of tomorrow? Managers do not become broader by adding one narrow specialty to another; they become broader by seeing the business as a whole. Management must focus on performance rather than on promise and on tomorrow's requirements rather than those of today. Developing tomorrow's managers means, in effect, developing today's managers—all of them—to be bigger men and better managers."

Our management responsibility for developing people to manage, I believe, must be through inspiration and opportunity for certainly we cannot be responsible for any man's development. This is a job he must do for himself. But, in carrying out our responsibility, we must be keenly aware of the qualities in our people which will make them capable of heading our companies in the years ahead. The ability to see our business in its entirety rather than the struggle for ascendency of one particular segment of the business over the other. Being able to reduce seemingly complex problems to their simplest terms and thereby solve them in a straightforward manner free from the distractions of detail. Long term planning—looking at the business and its place in the economy five years—10 years—from now and being able to analyze the company's future needs and objectives.

These are the men we are trying to find—these are the men we must develop if we are to fulfill our management responsibility for the continuation of our companies and the telephone industry as we know it.

What kind of a tomorrow is it that telephone management must plan for? David Sarnoff, chairman of the board of Radio Corp. of America, had some interesting observations in a January, 1955, story published in *Fortune* which was entitled "The Fabulous Future."

Mr. Sarnoff believes the next few years will be a period when many important and drastic decisions will have to be made. Many advances in the field of science and technology will be a certainty. The application of nuclear energy will be ever-increasing in its scope. The great number of research organizations will continue to bring forth developments that will have to be absorbed in our industrial development and, in some cases, will greatly change the activities and problems of industries. There will be significant political and social developments and the world's society will be changed in many ways.

This all means that the coming years will undoubtedly call for many major and prompt decisions on the part of management and will confront it with great challenges that it has not had to face in the past. Heavy demands will be made upon the wisdom, courage and character of those who carry on into the future.

Automation a Problem

One of the social-technical problems which is already upon us and one with which the telephone business has been concerned for many years is that of automation. It is my thought that automation is similar to the mass production revolution which occurred earlier in this century and its impact on business may be greater and it may be faster.

The telephone dial equipment as we presently know it, the machines which are coming into common usage for registering the time of a long distance call, computing the cost, selecting the proper bill and then imprinting the correct amount is automation in its truest sense, for here we have machines to run other machines.

Let's turn again to Mr. Drucker and his April, 1955, article in *Harper's Magazine*. Here's what Mr. Drucker has to say about automation:

"If automation were a simple matter of technology, or replacement of human labor by machines, its social impact would be precisely what Walter Reuther has predicted—large scale displacement of workers. It might still be arguable whether this displacement would result in mass unemployment as Reuther says; the fact that during the next 20 years our working population will grow but slowly makes it implausible that there will be chronic unemployment even if automation comes fast.

"Automation's most important impact will not be on unemployment but on the qualifications and functions of employes. Incredibly large numbers of men will be required behind the scenes in new, highly skilled jobs. In addition, large numbers of highly educated men will be needed in new jobs as designers of machinery, system engineers, mathematicians or logicians.

"Finally, large numbers will be needed for new managerial jobs requiring a high ability to think, to analyze, to make decisions, and to assume risks. This increase, both in the numbers of managers and in the demands made on them, may well be the largest of all the social impacts of automation."

Personnel Training is Issue

Truly, we as managers are confronted with a far-reaching development with this aspect of automation, for here is a formidable tool to help us perform our telephone services more effectively yet the change in our personnel poses a brand new set of problems. How shall we plan for this group of highly educated people? How are they to be worked into our organizations? Does the development of the machinery precede the development of skilled personnel or does it work the other way? These are management responsibilities as it prepares for the era of automation.

Perhaps the most significant and challenging development which telephone management will have to contend with in the years immediately ahead is the massive and continuing flow of business and people. Primarily, this movement is away from metropolitan areas toward less populated sections; it is away from the east and north toward the south and west. As *Business Week* in its Aug. 13, 1955 issue stated it:

"The movement has been going out of New England, out of the Middle Atlantic and into the rest of the country, notably the Southwest and the Pacific Coast. But this leaves out what is really the most surprising fact about the migration of the last seven years—namely, that the shift has been just as fast as it was in the unsettled days of World War II. And the movement is no longer concentrated in a few industries, such as textiles and leather. By and large, it is across-the-board now."

Has a population shift affected this movement of industry, or have people established homes where they could find work and have thus followed the migration of business? This is difficult to determine, but the simple fact which, I believe, we in the telephone business must recognize is that population shifts and income shifts have created new customers in new locations and that these new loactions are rather permanent.

Small Communities Gain

The effects of industry's decentralization and its shift from big metro-

(Please turn to page 52)

MULTIMETERS for Telephone Testing

By C. W. EVANS*

PROBABLY the most valuable, and certainly the most inexpensive, test instrument for telephone testing is the ordinary receiver. Its use in the hands of an expert can, in many cases, lead directly to the trouble. The test receiver, however, is limited in its ability to make quantitative measurements. The difference in loudness of the clicks, when five and 25 volts are applied, can readily be detected, but determining the difference between 20 and 25 volts is another matter.

The multimeter or volt-ohm-milliammeter, abbreviated VOM, is a relatively inexpensive test instrument which can pay for itself in time saved by any regular telephone repairman. The cost for a good ac-dc meter will vary from $15 for a meter available in kit form, to $40 for a sensitive meter that can handle nearly any telephone testing job. Many good meters are available on the market today and the choice is largely a matter of suitability of the scales and the convenience of the switching arrangement. Size of the meter case also varies.

For general telephone use a meter should have a sensitivity of at least 1,000 ohms per volt on both dc and ac. DC sensitivity of 20,000 ohms per volt is desirable where measurements on electronic equipment are to be made. The most useful voltage and current ranges are about 10, 50, 250 volts ac and dc, 10, 100, 1,000 milliamperes and 10 amperes dc. Ohms ranges at mid-scale should have about 20 ohms, 200 or 2,000 ohms, and 20,000 ohms. The maximum useful resistance which can be read on each ohm scale is about 10 times the mid-scale reading even though the scales may be calibrated to 100 times the mid-scale value. A desirable feature, not found in many meters, is a line reversing switch. A type of case which permits use of the meter while it is in the case is probably a good investment.

Modern VOM's are fairly rugged but, of course, they must be protected from severe mechanical shocks and from application of excessive voltages or currents from the scale being used. Of special importance is the avoidance of connecting an external voltage to a circuit being measured with an ohmmeter. Most ohmmeters use a 1½-volt battery for the lower ranges and connection of the meter, when on one of these ranges, to 24-volt battery source is likely to damage the instrument.

A multimeter consists of a meter movement, together with series and shunt resistors and a switching or jack arrangement to make the necessary internal connections. A meter movement which has a resistance of 50 ohms and reads 1 milliampere full scale would also be a millivoltmeter reading E = IR = .001 X 50 = .05 volts or 50 millivolts.

Fig. 1 shows such a meter movement and three series resistors to provide a dc voltmeter with ranges of 10, 50, and 250 volts. The 9,950-ohm resistor when added to the 50-ohm meter resistance gives a total resistance of 10,000 ohms. When 10 volts is applied to this combination the meter will read its full scale or 1 milliampere. Similarly for the 50 and 250-volt ranges the total resistance is 50,000 and 250,000 volts. This voltmeter has a sensitivity of 1,000 ohms per volt.

Fig. 2 shows the same meter movement used as a dc ammeter with ranges of 10, 100, 1,000 milliamperes and 10 amperes. In this circuit shunt resistors are used of such a value as to carry full scale current for the range less the 1 milliampere through the meter.

AC voltages in VOM's are measured in the same general way as dc voltages, except that a metallic rectifier is added to the meter movement. The use of a

*Mr. Evans is supervising repair foreman for Southwestern Bell Telephone Co. at Hutchinson, Kan.

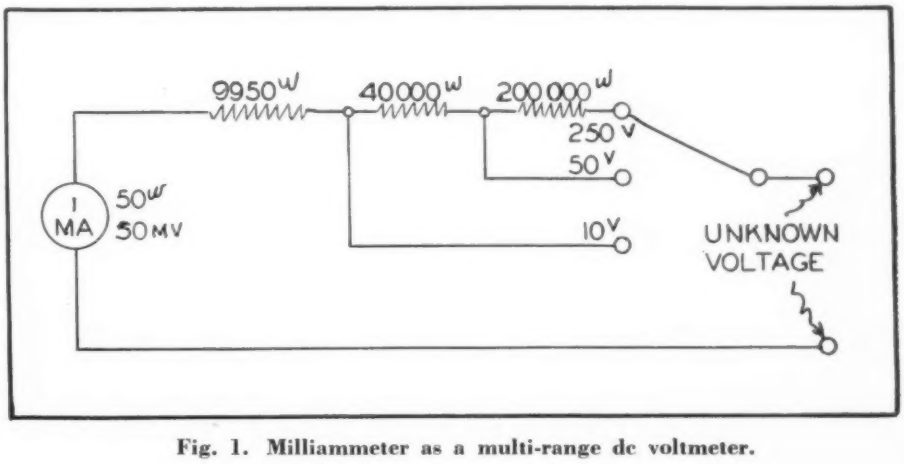

Fig. 1. Milliammeter as a multi-range dc voltmeter.

rectifier reduces the sensitivity of the meter somewhat, therefore, ac-dc meters either have different sensitivity on ac and dc, or when used on dc they are shunted to have the same sensitivity as when the rectifier is used. Most multimeters do not have provision for measuring ac current. However, ac currents can be determined by measuring the voltage drop across a resistor inserted in the circuit. If for example, a 1-ohm, 20-watt resistor is inserted in series with a load, currents up to 4 amperes can be measured directly on the volts scale of the meter. Currents in excess of 4 amperes would exceed the wattage rating of the resistor. *Fig. 3* shows such an arrangement.

Fig. 4 illustrates a simplified ohmmeter circuit with mid-scale ranges of 15, 150 and 1,500 ohms. The milliammeter requires a special scale to read ohms. This scale will be non-linear and have zero ohms at 1 ma, 15 ohms at .5 ma and 135 ohms at .1 ma. To use the meter, the terminals are shorted and the zero-adjust resistor adjusted to read zero ohms. The terminals are then connected to an unknown resistor and, if the lowest range is chosen, the resistance values are read directly on the ohms scale. If one of the other ranges is used the value of the ohms scale is multiplied by 10 or 100 as appropriate. The effective resistance of the meter and resistors is 15, 150, and 1,500 ohms for each of the three ranges.

The range of meters can be extended by adding external series or shunt resistors as appropriate. In the case of the ohmmeter in *Fig. 4*, if an RX 1,000 range were desired it would be necessary to set the switch for RX 100 and add an external battery of 9 X 1.5 volts, or 13.5 volts, and an external resistor of 9 X 1,500 ohms, or 13,500 ohms.

An ohmmeter may also be used to measure capacitance. *Fig. 5* illustrates this use. When the lead A is connected to terminal 1 of the ohmmeter a kick of the ohmmeter hand will be noted. This is caused by the current flow required to charge the capacitor to the ohmmeter battery voltage. The amount of this momentary kick will depend on the characteristics of the meter and the value of the capacitance. The reading is approximately proportional to the value of the capacitance. Any steady reading of the meter indicates capacitor leakage. In order to get an accurate value of this momentary reading, or kick, it is necessary to make several trials. In order to make repeated trials, it is necessary to discharge the capacitor. One method of doing this is to touch lead A to lead B momentarily. If the ohmmeter has a line reversing switch the capacitor can be discharged and charged with the opposite polarity by operation of the switch. This will give twice the kick obtained by the other method. In order to get usable kicks on the meter, it is usually necessary to use battery voltages of at least 4.5 volts.

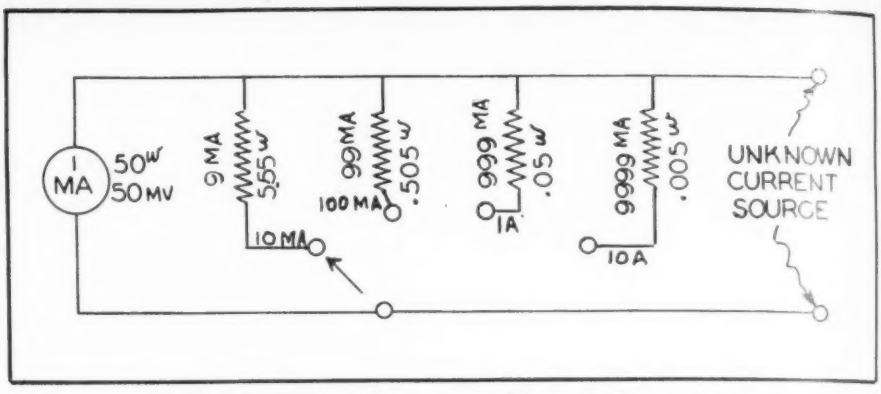

Fig. 2 Milliammeter as a multi-range dc ammeter.

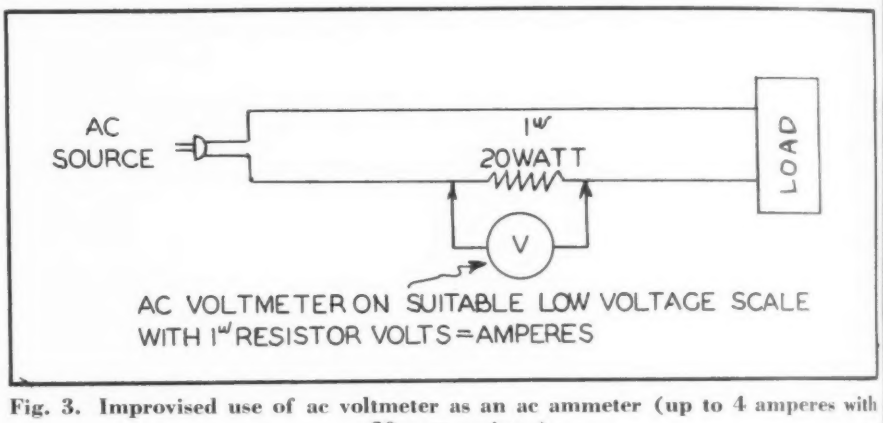

Fig. 3. Improvised use of ac voltmeter as an ac ammeter (up to 4 amperes with 20-watt resistor).

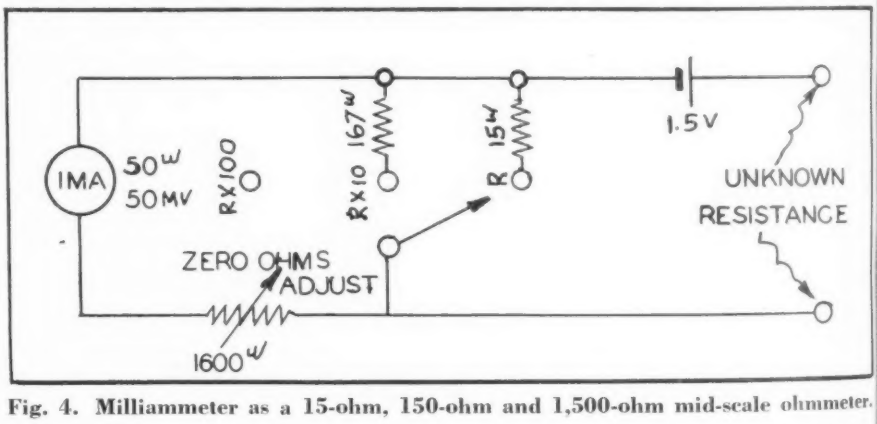

Fig. 4. Milliammeter as a 15-ohm, 150-ohm and 1,500-ohm mid-scale ohmmeter.

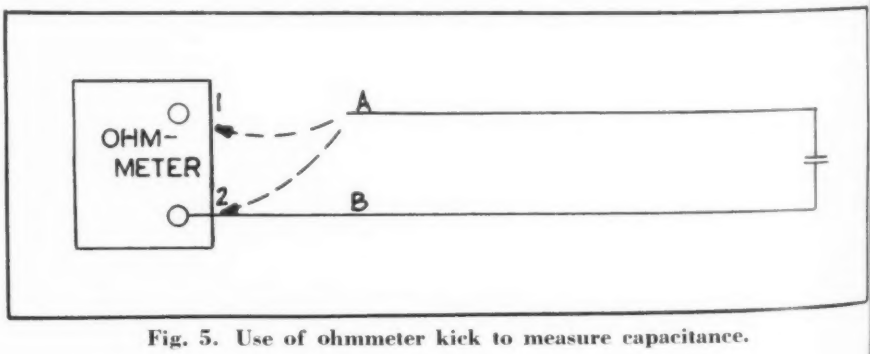

Fig. 5. Use of ohmmeter kick to measure capacitance.

Multimeters with suitable ranges can be used to measure battery voltages and currents, resistance, capacitance, ac line voltages and ringing machine voltages. Some meters have decibel scales but since 1 milliwatt into a 600-ohm line has a voltage of only .775 the

oltage ranges of most meters are too ow to have more than limited use in measuring telephone power.

Trouble in a component of a telephone set can usually be located quickly by use of an ohmmeter. A typical common battery anti-sidetone telephone set is shown in *Fig. 6*. When the ohmmeter is connected to L_1 and L_2, with the receiver on the hook, a capacitance kick only should be read. When the receiver is removed from the hook, the ohmmeter should read the sum of the 25-ohm primary winding of the induction coil and the varying transmitter resistance. A definite swing of the needle should be observed as the transmitter is talked into.

This test could also be made if the telephone were connected to the line through the 100 ma range of the milliammeter. With the receiver off-hook, the resistance between points A and B would be the result of the 60-ohm and 80-ohm resistances and should read 35 ohms. A resistance reading, varying substantially from that made on a similar component known to be in good condition, is an indication of trouble.

In order to check the circuit in *Fig.* 6, for an open in the capacitor between points C and D, it is necessary to remove the transmitter unit or disconnect the transmitter cord from point A. All three windings of the induction coil may be checked simultaneously by connecting the meter to terminals L_1 and C, with the receiver on-hook. The ohmmeter should read the sum of the three windings or 105 ohms.

Fig. 7 illustrates the use of an ohmmeter to determine the approximate location of a cable pair open. If the ohmmeter does not contain a line reversing switch, a double pole-double throw toggle switch can be provided externally. The shorting method, shown in *Fig. 5*, can also be used if it provides sufficient kick. The ground on the defective wire at the distant end will improve the accuracy of the results. It may be at any place beyond the open.

The method compares the capacitance of the good wire taken to the bad wire grounded to the capacitance of the near-end of the bad wire taken to the good wire grounded. Connect the near-end ground to the ring and operate the reversing key several times noting the maximum reading on one of the voltage (not ohms) scales. This gives the capacitance of the "tip-to-ring" and ground. Move the ground to the "tip" and make the kick reading on the same scale as before. The ratio of the kicks on the two wires gives the ratio of the distance to the open to the total length of the pair.

For example, if the reading with the "tip" grounded is 6 volts, and the reading with the "ring" grounded is 10 volts, the trouble is 6/10 of the distance to the end of the pair. If the total length were 5,000 feet the trouble would be 6/10 X 5,000 feet = 3,000 feet from the testing end. Measurements can also be compared with readings on good pairs over the same route. If the cable pair has bridged legs, these legs must also be considered in computing the lengths.

Fig. 8 illustrates the use of an ohmmeter to measure a short on a line facility. In interpreting the result of the measurement, the possibility of substantial resistance in the fault must be considered. Suppose the line facility is 109 high strength wire having a resistance of 75 ohms per loop mile. If the ohmmeter reads 150 ohms, the trouble will be within 2 miles from the point of test. Any resistance in the fault causes the trouble to appear farther away than it really is. Shorts having

(Please turn to page 57)

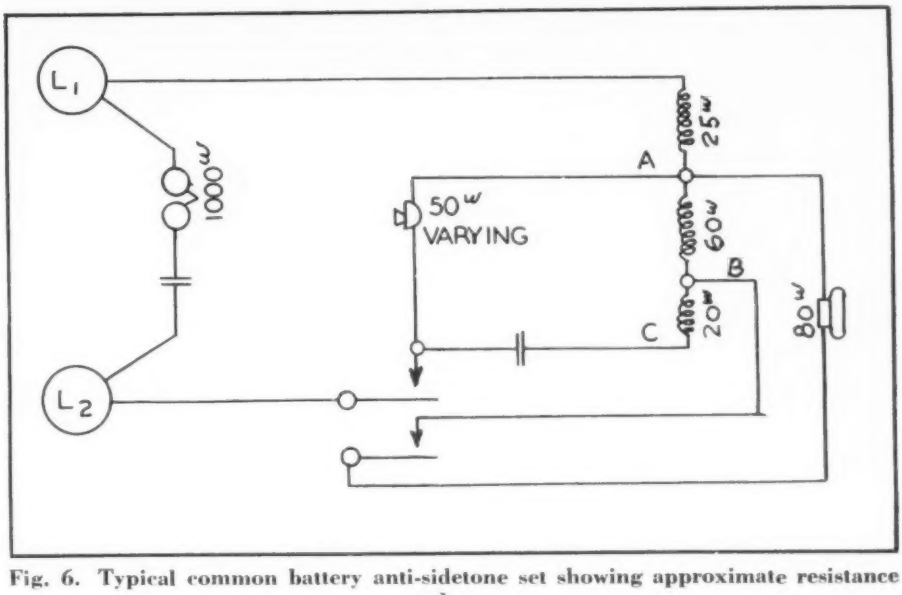

Fig. 6. Typical common battery anti-sidetone set showing approximate resistance values.

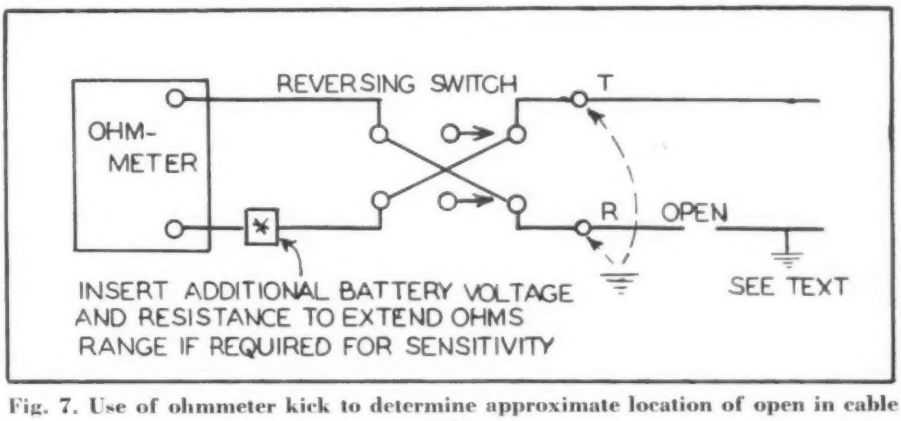

Fig. 7. Use of ohmmeter kick to determine approximate location of open in cable pair.

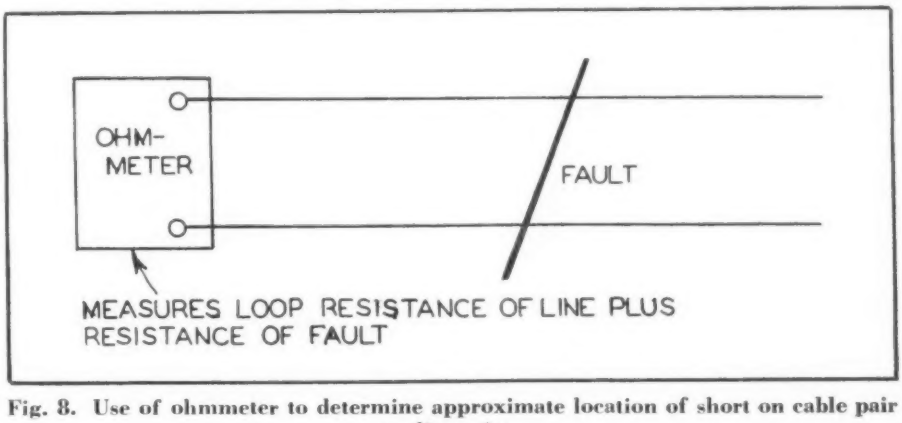

Fig. 8. Use of ohmmeter to determine approximate location of short on cable pair or line wire.

Virginia, West Virginia Associations Hold Joint Meeting

By DAN S. FARGO

THE 21st annual convention of the Virginia Independent Telephone Association was held jointly with the West Virginia Independent Telephone Association on Oct. 20 and 21 in Roanoke. This year's convention program together with year-long activities of both clearly brought the two associations nearer their common goal, which they state as follows:

"It is the object and aim of these associations to bring together in a firmer union all Independent telephone companies in their states for the purpose of promoting and aiding Independent telephone interests in their respective states."

The president of the Virginia association, Garland T. LaPrade of Martinsville, presided at the first session, a luncheon, at which Carl Ballentine of Pine Grove, W. Va., gave the invocation, and D. B. Draper of Staunton, Va., introduced Leon F. Roberts, director of information of the United States Independent Telephone Association.

Speaking on "What Our Telephone Associations Mean to the Industry," Mr. Roberts stated that an "association is an industry in action, helping itself to grow. It engages in those activities which its members can do more economically and effectively working together than separately. An association serves an entire industry rather than a select few.

"Through the effective collaboration of many firms in associations—big and small companies working together—private enterprise is strengthened, as lower cost and increased production result. This is one of the great contributions of trade associations to the private enterprise system," he said.

Mr. Roberts then reviewed the activities of the USITA and told how these activities worked for the good of the Independent industry as a whole.

Mr. Roberts urged his listeners as individuals to aid themselves and the national association by writing to congressmen to preserve the 750-station-exchange exemption and to request legislation on facility removal cost in the federal aid highway development program.

At the afternoon business session, Mr. LaPrade spoke briefly on activities and accomplishments in the past year by the Virginia association.

Walter G. Robertson of Warsaw, Va., association secretary-treasurer, reported that the group now numbers 38 member companies, representing 175 exchanges and 155,000 stations. There also are 48 associate members. "As of now," Mr. Robertson said, "registration stands at 279, with an expected total of 330 before adjournment."

Reports of standing committees were heard, directors were elected, and J. W. Null of Wayne, W. Va., first vice president of the West Virginia association, addressed the convention briefly.

H. J. Kleinhammer of Bristol, Tenn., presided at the general departmental conferences, feature of the second day. First to speak — on "Merchandising, Our Biggest Job" — was Arthur F. Boyd, general commercial engineer of General Telephone Co. of Kentucky, Lexington. Mr. Boyd acknowledged that "*you* are convinced that there is a need for merchandising." Then he asked:

"But what about your employes? Have you told *them* why a sales program is a must if your organization is going to continue in business on a sound financial basis?

"Very few of them, probably, can remember back to the time when we *had* to sell if we wanted to stay in business. They have accepted the negative advertising I mentioned before and it is beyond their comprehension as to why we have to sell. Are you doing anything about correcting that situation?

"Every employe of yours represents your company to the people they meet and talk to. It is easy to see how much more effective any sales program can be if *all* your employes understand the *why* of this merchandising."

As for what to merchandise (in addition to initial service), Mr. Boyd listed extra telephones (extensions); bells and gongs; directory listings; wiring plans; retractile cords and jacks and plugs; save-a-disconnect; additional PBX services; toll stimulation, and miscellaneous items, such as push-button telephones; buzzers; intercom circuits; automatic answering service, etc.

Mr. Boyd told of the results of selling efforts by employes in a 2700-station exchange located in the "midst of the Kentucky coal field unemployment problem." Using just the regular employes, he said, the merchandising program produced $12,000 in additional annual revenue in the first eight months of 1955.

Some of the steps used in developing the company-wide sales program were given by Mr. Boyd as follows:

(1) Introductory letter from the president to all employes.

(2) Supporting letter from the vice president to all employes.

(3) Group meetings held throughout the state, at which each employe received:

- (a) A letter from his own department head emphasizing the need for the program.
- (b) A "sales kit" containing sales ideas, rates, prospect cards, etc. (see TELEPHONY, June 18, p. 18).
- (c) A short talk on the why, what and how of selling.

(4) Sales stimulation material distributed frequently.

(5) "Product-of-the-month" cards attached each month to the employe's checks.

(6) Monthly sales articles, appearing in the house organ with full recognition

given to individuals, exchanges and districts doing an outstanding job.

(7) Development of a sales trade-mark.

(8) A competitive "point" system, with what is called the "100 club" for employes earning that many points.

(9) Distribution of cut-outs of the sales trade-mark for bulletin board announcements.

Mr. Boyd emphasized that there are additional benefits to be gained from a merchandising program. Among them are improved relations with the public. He said, "I am thoroughly convinced of one thing—that public relations can be improved and can really pay off when approached on a purely individual basis. In our 23 exchanges in Kentucky, in the last eight months, we have made a total of 35,007 sales contacts.

"That means, that in one way or another, we have presented our company to that many people, and have asked them to give us an opportunity to improve their service. The reaction we get from those sales contacts has indicated that we have achieved a tremendous forward step in public relations."

"Employment Practices" was the subject of a thorough-going discussion by Mrs. Marie Torian of Roanoke, a Chesapeake & Potomac Telephone Co. administrative supervisor.

Mrs. Torian observed that since the best source of new employes is the present employe force, it is therefore wise to remind employes of the advantages of working for the telephone company. She included among the advantages regular permanent employment; a chance to earn while learning; company training programs; regular pay raises; working conditions that are safe, pleasant and healthful, and the fact that the work is vital to our country. Those responsible for securing new employes should receive recognition on the company bulletin board, she advised.

Mrs. Torian mentioned some of the steps her company takes in approaching high schools for new employes. These include:

Open houses and teas.

Movies and talks.

Handbooks describing telephone company job opportunities—left with high school counselors.

Cards of congratulations to each high school senior girl shortly before graduation, accompanied by a card inviting the recipient to visit the employment office.

Literature about the company for hand-out periodically.

Mrs. Torian also went into C&P's employe qualifications, including physical examination and educational requirements; reception of new applicants, and methods of interview.

The officers and directors of the Virginia Telephone Association are (sitting, left to right): Harry P. Cavendish of Harrisonburg, secretary-treasurer; D. B. Draper of Staunton, president; Walter G. Robertson of Warsaw, second vice president, and Conrad J. Logan of Tarboro, N. C., first vice president. Standing: Kermit S. Land of Pungo; A. E. Reynolds of Briston, Tenn.; W. J. Holloway of Smithfield; C. W. Yancey of Disputanta; Duane T. Swanson of Charlottesville; Stanley A. Owens of Manassas, and Garland T. LaPrade of Martinsville, retiring president.

J. Harvie Wilkinson Jr., executive vice president, State-Planters Bank & Trust Co., Richmond, spoke on "The Capital Structure and Interest Rates."

Mr. Wilkinson said that bankers, in determining interest rates, try to ascertain the prospective borrower's earning power and prospects for continued earnings. These, they feel, depend on not-too-obsolete plant; good public relations; a fair rate of return, and (preferably) a growing and vigorous territory.

A banker, Mr. Wilkinson said, will apply certain other yardsticks, such as net plant per dollar of revenue. A composite figure for 14 companies, he quoted, was $2.79 of net plant per dollar of revenue. If an individual company's figure is low, he said, either its plant is too old or its subscriber rates are too low. Another yardstick mentioned was per cent of funded debt to total capitalization. For the same 14 companies, the percentage ranged from zero to 55 per cent with the composite 41.8 per cent.

A factor also to be considered, he stated, is the number of times interest on funded debt is covered by earnings available for debt service.

Mr. Wilkinson urged his listeners to pick their commercial and investment bankers as they would their doctor. Once chosen, one's banker should be informed on one's financial position and argued with when necessary.

Interest rates, in general, reflect the level of business activity; supply of and demand for money, and the policy of the Federal Reserve System, he stated. As indicators of the health of business in general, he advised watching the levels of housing starts and auto production, the level of loan figures for commercial banks, and the reserve position of commercial banks.

A luncheon for the ladies present was presided over by Elizabeth Dull of Harrisonburg, Va.

Opening the afternoon's departmental conferences was an address and demonstration by F. I. S. Hull Jr. of the Chesapeake & Potomac Telephone Co., titled, "Looking Ahead in Telephony."

A panel discussion, titled "Picking Up Pennies," concluded the convention sessions. Moderated by Wilson B. Garnett of Charlottesville, Va., the panel consisted of Macy A. Bowman of Martinsville; Conrad J. Logan of Tarboro, N. C.; Roy W. Morton of Bristol, Tenn., and John B. Noggle of Charlottesville.

Directors elected by the Virginia association for three-year terms are D. B. Draper of Staunton; W. J. Holloway of Smithfield; A. E. Reynolds of Bristol, Tenn., and W. G. Robertson of Warsaw. For a one-year term: Harry P. Cavendish of Harrisonburg (to complete term of J. K. Funkhouser, deceased). Other directors are Garland T. LaPrade of Martinsville; Duane T.

(Please turn to page 61)

The pole testing kit used by the author in his new approach to calculation of the amount of creosote in poles, consists of (A), an increment borer for taking borings from poles; (B), a tube in which boring is inserted for grinding; (C), a test tube for receiving ground wood, and (D), a comparator in which the tube, containing ground borings diluted with solvent, is inserted to match color against the known standards.

Determining Creosote in Standing Poles

*By Monie S. Hudson**

ONE OF THE MOST frequently recurring questions that arises in the maintenance of wooden pole lines is, "What to do with poles that have been in service for, say, 10, 15, or 20 years which have been removed because of line changes." Other questions that naturally follow are: "Should they be used as replacements in a new line? If so, should they be treated in some way before being replaced?"

Likewise, as standing pole lines approach the average life span, questions arise regarding what to do to detect and remove poles in immediate danger of failure; or to find poles in which depletion of creosote is so great that they require some type of treatment to prolong their service life.

Current Inspection Methods

In seeking answers to these questions, an inspection procedure is usually set up which includes:[1]

(1) An over-all external survey for evidences of decay or insect damage.

(2) A search for signs of internal decay by tapping along the pole with a hammer.

(3) Boring the pole to obtain a sample from the cross-section which is examined to see whether it is soft or crumbly, indicating decay. The boring is also used to check the depth of penetraction of creosote in the wood.

(4) Probing at the groundline with a sharp-pointed instrument in search of soft or spongy areas which are caused by fungus attack.

In addition, a test to measure the resistance of the pole to applied stress has recently been reported by Brady.[2]

Since these tests only yield information as to the soundness of poles at the time of inspection, the inspecting engineer inevitably has an experience like this:

After making an inspection, he thinks: "Here is a group of poles that according to my tests are all perfectly sound—there is no external sign of attack by wood destroyers. They ring clear to the hammer, and borings confirm the absence of internal decay. But my most important question is still unanswered—how much longer will the poles remain sound?"

Knowing that the creosote contained in the poles governs resistance to attack, he concludes that a determination of the amount of creosote remaining in them will give him the answer to his problem. So he goes to his supplier of creosoted poles, whom he is sure must use a method for determining how much creosote there is in the poles which he treats.

But on contacting the supplier, he finds that no such method is in use at the treating plant. He is told that the amount of creosote in the poles is determined by measuring how much is used out of the plant's tanks in treating charges of poles.

He is further told that a method is being studied by members of the American Wood Preservers Association

*Mr. Hudson, a consulting chemist of Spartanburg, S. C., presented this paper before a recent meeting in Detroit, Mich. of the Transmission and Distribution Committee of the Edison Electric Institute.

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which will give the amount of creosote present in borings taken from treated poles, but that this method requires considerable time on the part of technical personnel in a well-equipped laboratory, and that it would be completely unsuited for pole-by-pole inspection in the field.

Rule-of-Thumb Method

Not wanting to leave the pole line engineer completely at a loss as to what to expect of the group of poles he has inspected, the creosoter tells him of a simple rule-of-thumb test that he might apply for estimating how much creosote is left in the poles.

The test is applied to borings taken from the poles:

(1) If the boring from a pole is black and has a pronounced odor of creosote, the pole is considered to contain ample creosote to assure its serving for as many more years as it has served already.

(2) If the boring is brown and has a more-or-less indistinct odor of creosote, the amount of protection remaining is not great. If such a pole is to be left in line or re-inserted, it should be given some form of field treatment to fortify its protection.

(3) If the boring is very light-colored and has no odor, or a musty odor, the pole should be thrown away unless radical measures for re-treatment are used.

When it is realized that the color of borings will vary depending on how much water is present in them, and that the ability of men to detect odors varies tremendously, the very doubtful value of this method of test is brought out.

For example, a light-colored boring when wet with water becomes dark. One man can detect an odor where another cannot. The same man cannot detect odors uniformly; he may be able to smell creosote in a boring today but tomorrow he may have a cold and be unable to smell anything.

A New Pole Test

Having had repeated experiences such as those described above while serving for over 20 years in a technical capacity in the wood preserving industry, the author conceived and developed in the chemical laboratories of Wofford College at Spartanburg, S. C., a quick and reliable method of test for determining the amount of creosote in poles. The test can be run in the field by any lineman.

Field Inspection. Equipment for carrying out the test is shown in the accompanying photograph. The test is carried out as follows:

With the boring tool marked "A" in the picture, a 3/16-inch-diameter boring is taken from the pole to be tested. This boring is preferably taken at the groundline (the area from the surface of the ground to about 18 inches below the ground) because it is in this zone that the greatest activity of organisms that destroy wood takes place.

Since creosote in poles in service tends to concentrate at the groundline and slightly above, it might be thought that this would not be the proper point to test because such a test would show the maximum amount remaining in the pole. However, as pointed out above, the maximum attack also occurs at the groundline. If there is adequate protection at the groundline, it is very probable that there is adequate protection above and below.

The boring is placed in a shallow groove in a small block of wood and the outer 1/32 inch is removed with a sharp knife or razor blade. This is discarded since it might have on it a deposit of pitch which would interfere with the test.

The next ½ inch of the boring is then removed and inserted in the tube marked "B" in the photograph. The section of boring is forced into the tube, by means of a small rod, where it comes in contact with a high speed rotary grinding tool driven by a motor. The boring is reduced to powder which falls into the test tube marked "C."

The test tube is then filled about two-thirds full with a solvent, dimethylformamide, which instantaneously removes the creosote from the ground wood. The point to which to fill the tube is indicated by a line etched on it.

The test tube is stoppered and shaken, and the solvent forms, with the dissolved creosote, a brown-colored solution. The test tube is then inserted in the comparator block marked "D" alongside the standard tubes mounted in the block. When a match in color is obtained, the known value for the standard tube (which is stamped above it on the block) is read off and this gives the amount of creosote present in the outer half-inch of the pole being tested. The standard tubes in the test block contain known amounts of creosote extracted from old poles.

Tests made so far indicate that when the standards are made up from poles that are within ±5 years of the age of those being tested, the amount of creosote indicated by the standard tube will be within ±1 pound per cubic foot of the amount that would be found by the most accurate laboratory extraction procedure. This is irrespective of the characteristics of the original creosote that was used in treating the poles.

Length, Location of Boring

The length of boring to use in the test and the location from which the boring is taken are governed by the set of standards that is used for comparison. For example, the outer 1 inch of the boring could be used, and it could be taken from a point 6 feet above the groundline if desired, as long as the set of standard tubes is made up for the outer 1 inch of a boring taken from above the groundline.

If a measure of the maximum depletion and change in composition of creosote in a pole is sought, then the boring would be taken from above the groundline because it is in this region where most of the loss of creosote occurs both by bleeding and evaporation.[5] In this zone, reaction with oxygen of the atmosphere causes changes in composition.[6]

Creosote present in the section of pole below the groundline is more nearly the composition of the original used in treatment because the surrounding soil serves as protection to prevent evaporation and oxidative changes.

It has also been found that poles which have a heavy coat of pitch at the groundline, left by evaporation of creosote that has bled out and run down, yield borings in which the creosote is like that of the original because the pitch serves as a protective coat to prevent access of air and water. Poles having such coatings should be tested with a set of color standards made up from extracts from similar pitch-coated poles, or from below-groundline extracts of poles.

Creosote Criteria

The following criteria have been tentatively set up for deciding what to do with poles when the amount of creosote remaining in them has been determined by means of the test kit, applying the test to the outer ½ inch of a boring taken at the groundline:

Creosote Content below 2 pounds per cubic foot:

Such a pole, if it is still sound, is only so by virtue of temporary conditions of moisture which are unsuitable for development of wood destroyers or because of a protective barrier of creosote that has bled into the soil around the base of the pole.

If this pole were set in a new location, it would probably rot off very quickly. Such a pole should be removed from line as soon as possible unless measures are taken to protect it by several heavy groundline treatments at intervals.

If it were already removed, it would be preferable to return it to a creosoting plant for re-treatment.

Creosote Content above 2 pounds per

(Please turn to page 58)

Cashiering and Bookkeeping Functions Combined in New Customer Service Counter

Its friendly appearance contributes to pleasant customer relations and provides the convenience of a sectional, easily moved counter. Two-drawer Steel Files, Safe-Files®, or Typewriter-Desk pedestals may be combined to form a functional work station. The cashier always faces front . . . therefore the customer gets immediate attention and transacts business quickly and comfortably. A continuous parcel shelf permits the customer just served to move aside for the next in line. Two or more units may be easily combined to provide the required number of work stations. *Certified*, insulated units installed in the counter provide 24-hour, point-of-use protection against fire for valuable records. Circle SC764 for detailed folder.

New Aristocrat Desk . . . Masterpiece of Engineering

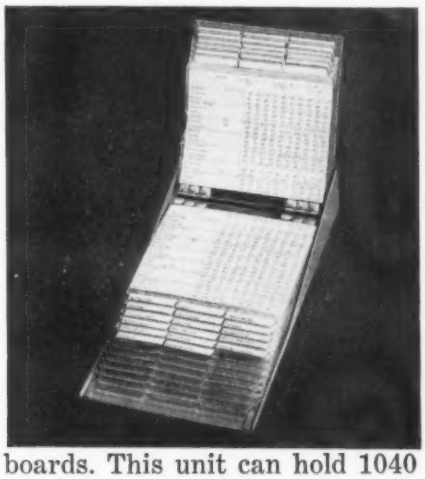
This new Aristocrat line of steel desks sets new highs in functional excellence, durability and beauty of modern styling. The overhang top is ideal for customer contacts in the commercial office. Tops, drawers and pedestals can be easily reassembled to meet varying requirements. Heights adjust from 29″ to 30½″. Available in exclusive Gray-Rite, and soft pastel brown or green. Circle FF187 for new booklet showing the full line.

New Multi-Card Bulletin Unit Cuts Circuit Holding Time

The Remington Rand Speedac Multi-Card Bulletin Holder Unit, Model 9966 is a KEYSHELF DIRECTORY UNIT designed expressly for fast reference to rate and route information at switchboard stations.

This complete information, now available at the flip of a pocket, enables the operator to handle many long distance calls with greater speed and accuracy than by trunking to another source.

A similar directory, the Speedac Chaindex Reference Unit, Model 9940.2 has been developed for use at PBX switchboards. This unit can hold 1040 frequently called outside numbers and can't help but improve the quality of any company's external telephone communications.



For more details, circle KD767.

Remington Rand

DIVISION OF SPERRY RAND CORPORATION

Room 2196, 315 Fourth Ave., New York 10

Kindly circle literature desired.

SC764 FF187 KD767

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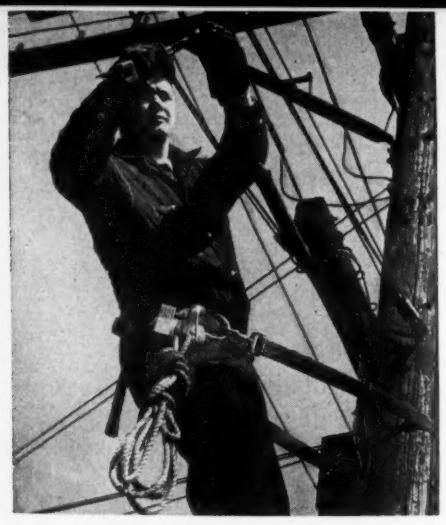

THE Plant Man's Notebook

BY RAY BLAIN, TECHNICAL EDITOR

A LETTER we received recently from D. E. McGregor, president of the Nebraska Central Telephone Co., Gibbon, Neb., described a method he has used with success in pulling poles when a line must be moved during a road-widening project. His letter states as follows:

"A small telephone company which does not have a truck with a boom and winch line should cultivate the acquaintance of the contractors or supervisors on the road project and, by doing them some favors, induce them to pull the poles with their 'dozers, scoops or grader blades.

"Many times the REA or the power crews have pulled a few poles for us when our heavy truck was not available. We have a gentleman's agreement with some of the county road crews to pull our poles when they are widening or back-sloping roads in our territory.

"On all large projects, I have the champion pole-pulling outfit of the world. This rig was used in pulling 850 miles of the old Postal Telegraph System. It is a Chevrolet 4x4 Army truck with a front-mounted boom and winch. It also has a second winch that is used to raise and lower the boom.

"This outfit has been used to pull 50 and 60-foot cedar poles with butts as big as a wash tub and we didn't do any digging.

"Sometimes, also, we hire a wrecker from a garage or obtain the services of a farmer with a hydraulic lift on his tractor to pull a few poles when our truck is not available."

•

The demonstration, "Looking Ahead with the Bell System," visited in Washington, proved most enjoyable and instructive to this writer. This demonstration covered microwave, automatic ticketing, direct distance dialing, Nike missile development, overseas telephone service, radio and submarine cable, transistors, the solar battery, the telephone answering device, and the loud-speaking telephone.

Colored telephones were much in evidence and needless to say they attracted considerable attention. Advantages of the cordless switchboard and the key type telephone were explained and demonstrated. Such special features as the explosion type telephone, the outdoor type telephone, the illuminated dial, plug-in telephone and special loud-ringing gongs and signals were explained.

Mock-ups were also used in a convincing manner to indicate how telephones may be installed in various rooms of the average residence to increase the joy of living. Even the advantages to be derived from a second telephone for teen-agers in large families and the use of extra listings were explained in a most convincing manner.

Undoubtedly a merchandising demonstration of this nature will not only do a good job for the Bell System, but for the Independents as well. We could not help contrasting this to the days when the customer was told what he could have in the way of telephone service, with little regard for what the customer considered his requirements to be.

•

In Washington, D. C., recently we witnessed a closed circuit industrial television demonstration that indicates clearly that this system has numerous possibilities in meeting special communication needs. The camera for this system is self-contained and easy to operate. In fact, we operated it for some time without difficulty. It is equipped with a lens turret and a motorized Zoomar lens.

The camera is also equipped with a control by which the sensitivity is automatically adjusted to accommodate varying ambient light levels.

The demonstration we witnessed had the equipment installed in a special van type truck. One camera was set up outside and picked up the passing traffic that flows constantly along Constitution Avenue. Two other cameras were in operation inside the van to demonstrate the various novel features of the system. The ease of operation was astounding.

•

Back in the old days, it was customary practice with some operating companies to have a tarpaulin cover for the large manual switchboards. This tarpaulin was carefully folded on top of the switchboard with pulls located at equal intervals so that the canvas could be drawn down to completely cover the switchboard. This was supposed to protect the equipment from water in the event that the exchange building caught on fire. It seems that there were cases where firemen ruined a switchboard with water when the building fire caused only slight damage.

Personally, we never knew of a single case in which the tarpaulin saved a switchboard from damage. We do well remember, however, how we had to help clean this tarpaulin at regular intervals, as it was a most efficient dust catcher. That was also before the use of vacuum cleaners were common in telephone exchanges.

We seriously doubt if any of these switchboard covers remain in service at the present time.

•

According to *Wood Preserving News*, a pole frame barn in Minnesota burned last December, together with six steers and more than 1,000 bales of straw and hay. Every piece of untreated lumber in this barn burned completely.

Pressure-treated poles were left standing intact. About 30 out of 42 poles remained standing. Investigation disclosed that they had charred from ½ to ¾ inch deep. Poles adjacent to hay and straw burned completely. When the untreated wood and hay had burned away, the pressure treated poles stopped burning.

In any **MODERN** switchboard installation–

Photo courtesy of Stromberg-Carlson

the choice is **ACCURATE AUTOMATIC TOLL TIME CALCULATING AND RECORDING**

by ***CALCULAGRAPH***

Because they quickly save many times their initial cost, CALCULAGRAPH permanent printed records eliminate switchboard detail work, speed service. Accuracy-to-the-second permits collection of all the revenue due on every call. CALCULAGRAPHS are precision instruments featuring high visibility dials, smooth silent lever action. Available in several models, they can be engineered into new equipment by your switchboard builder or easily included in your present set-up. For complete information just call or write.

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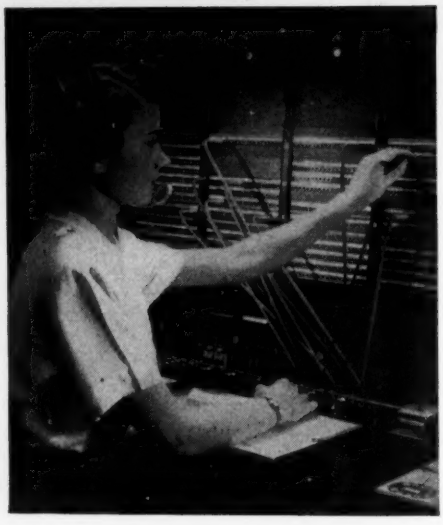
THE STANDARD OF ACCURACY SINCE 1892



THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

NO DOUBT there are many hidden talents among telephone folk throughout the nation, and occasionally one comes to light, as happened recently when the writer received a letter from Mrs. Leonia Greenway, long distance operator for the Union Telephone Co., Dowagiac, Mich. In her letter Mrs. Greenway commented on "The Operator's Corner," stating she reads it with interest and she especially enjoyed the article which appeared in the Aug. 13 issue concerning the hot weather and the operator's attitude toward her customers, which she thought was very timely.

In her letter Mrs. Greenway enclosed an article, composed and written on June 17, 1955, which I am happy to incorporate in "The Operator's Corner" for your perusal. It is entitled:

TELEPHONE GIRLS

Whether you have an emergency
Or wish to chat awhile,
We telephone girls will give you
"Service With a Smile."

Just dial the "O" to reach us,
We answer without delay,
And in the twinkling of an eye,
Your call is on its way.

We do our best to complete
Each call that comes our way,
Until you desire it cancelled,
We will work on it all day.

We have no hours from dawn 'til night,
We work around the clock
So any time you need us,
We are ready on the dock.

We meet all kinds of people,
In the work that we do,
From the weakest to the strongest,
The fickle and the true.

The nervous ones, the sad, the gay,
The hurried, mean impatient ones,
Nice and otherwise,
All in just one day.

To our customers we're a lot of things,
A mind reader, a booth of information.
We're supposed to know about people
And places all over the nation.

We have our ups and downs as well,
Just like everyone else, I suppose,
But we appreciate and enjoy our work
Which is an asset, everyone knows.

So, if you have a loved one far away
With whom you'd like to talk today,
A business call, or a friend you know,
You reach us simply by dialing the "O."

According to Leonia, she has been a writer of a sort since she was 17, and she will never forget the thrill of having her first poem published. She is a modest person in stating, "I have had more than my share of glory for the little things I have written, for such a simple 'little' person like me, but I derived more pleasure from the writing itself than from the honors I received. I just love to write, but I simply do not have time with my work as an operator and my home and three girls, 10, 11, and 12."

Leonia sent me a picture of her three little daughters, Norma (12), Esther (10) and Donna, (11). Also a picture of her husband and her taken on their 13th wedding anniversary. What a happy family they must be!

Among other articles written by Mrs. Greenway which have been published are: "Autumn Meditation," featured in the "National Poetry Day Column" (Oct. 1952), and "That's Children For You," published in "American School News," with a story about Leonia's family and her, and broadcast over WREC at Memphis, Tenn.

We are proud to have you in our Telephone Family, Leonia, and hope you will find more time to follow your favorite avocation.

And so, as we stated in the beginning, no doubt there are many hidden talents among the men and women engaged in the Telephone Industry, if we just had some way to ferret them out.

There comes a time in everyone's life when they must lay aside their tools and the work they have followed for many years. If they have a hobby which they have developed through the years, they are fortunate, as they will be able to spend many happy hours in doing the things they did not find time to do during their active years of service.

Traffic Questions

(1) Where should delayed tickets be held which require a subsequent attempt or subsequent report in 20 minutes or less from the previous attempt?

(2) What reports are included on delayed tickets which require a subsequent attempt or subsequent report in 20 minutes, held at the original position where the original attempt was handled?

(3) When an operator receives a report that the called party is expected today or it is not known whether he will be there today, what action should be taken by the operator?

(4) When an operator receives a report that the called party is expected on a future day or it is not known when he will be there, but it will not be today, should the operator ask the calling party when he wishes the call tried?

(5) How should the operator proceed when she receives a report that the called party is not expected at any future time?

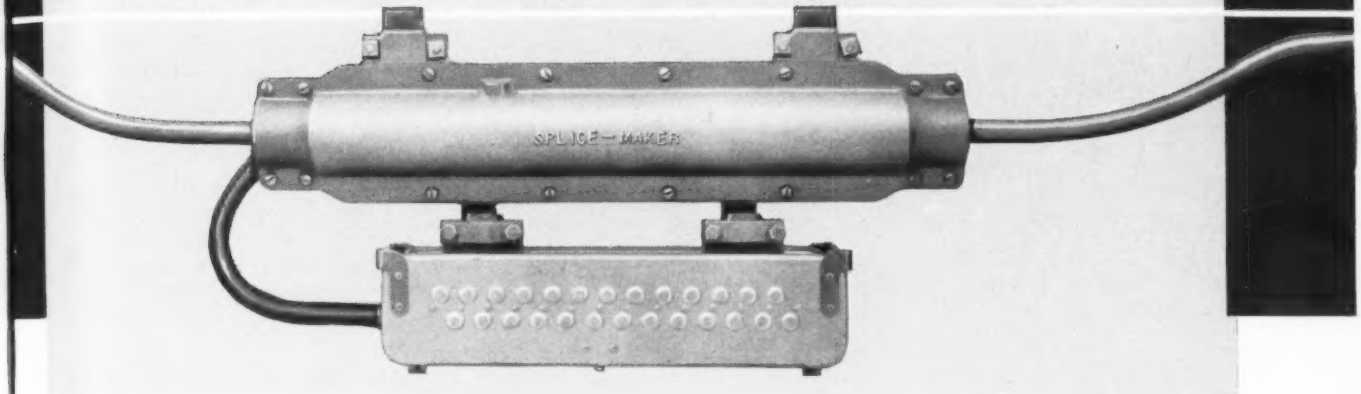
Answers are presented on page 64.

The Constant Drain

"We have become so accustomed to paying hidden taxes that we may not as a general rule think of them when we go out shopping. Something of the same thing is true in reverse when we take home our pay envelope. We have become so accustomed to deductions for withholding tax, unemployment insurance and social security premiums that we actually have begun to think of our 'take-home pay' as being our real salary."—LEADER, *Wildwood, N. J.*

Above All

For Economical Convenient Outside Construction



This combination will accommodate distribution cable from 11 to 101 pair (¼" to 1" dia.) and subscriber drops up to 26 pairs. Protection is optional "by the pair" with Cook Minigap dischargers.

So for the first time this "do it yourself" type of cable splicer makes it possible to splice and terminate more economically and in one operation.

This all aluminum assembly is moisture tight with factory stubbed plastic interconnecting cable stub ready for splicing to the straight through transmission cable. Subscriber drops prevent wind sway and all parts are corrosion resistant.

DESCRIPTION	CATALOG NO.
11 PAIR SPLICE MAKER STRANTERM	352-1500 UNPROTECTED 352-1501 PROTECTED
16 PAIR SPLICE MAKER STRANTERM	352-1502 UNPROTECTED 352-1503 PROTECTED
26 PAIR SPLICE MAKER STRANTERM	352-1504 UNPROTECTED 352-1505 PROTECTED

INDEPENDENT

COOK ELECTRIC Company

Since 1897

700 SOUTHPORT AVENUE CHICAGO 14, ILLINOIS

DIALING in the DARK

By LUCILLE TOURNEAR

TO MOST PEOPLE a telephone is a luxury, but to the blind it is both a necessity and an escape from loneliness. The sighted world takes such things as transportation and communication for granted. These are major problems to the majority of the blind.

Those who lose their sight in middle, or old age, find it extremely difficult to adjust themselves to their new life of bewildering strangeness.

The telephone enables them to keep in touch with their old friends. It enables them to make new and lasting friendships. Most of their outings are arranged by telephone. The greater part of their shopping is done in the same way. Through the help of understanding librarians, the telephone has served as a medium of education.

When a blind person first learns to dial a telephone, he feels that he has really accomplished something. He is no longer dependent upon the operator, he has taken a new step toward self reliance.

We are usually very accurate dialers because we have to count letters and numbers; therefore, we are less likely to be careless. We learn that the letters are found on the numbers from two, through nine, and that there are three letters on each number. For example, if I were to dial EXmont 4-5221, I would dial 39, 4-5221 because D, E and F are on three, and W, X and Y are on nine, etc. With this simple formula, you can't miss.

During World War II, I did the dialing for the family when they wished to make a rush call during a blackout.

Though mistakes in dialing are usually very annoying, occasionally they turn out to be extremely beneficial. Edna May Stewart lives alone, and finds her telephone very necessary. Shortly after she had learned to dial, she decided to practice her skill on me, so she dialed what she thought was EXmont 4-5221. Through the slip of a finger she dialed 4-5332.

When she realized her mistake, she apologized and explained that she is blind and had just learned to dial. The lady of the wrong number and my friend Edna May carried on an interesting "get acquainted" conversation.

A few days later they met and have since become very close friends. Edna May's new friend was interested in meeting me since I was indirectly responsible for their meeting. Now I too have acquired a new friend. She has become a sort of fairy godmother to both of us, all because of the slip of a finger on the dial.

Since this incident illustrates the exception rather than the rule, perhaps I should briefly sketch a telephone day which is typical in my usual routine.

In the early morning I call the grocer for a week's supply of groceries. A little while later I discover that, for no apparent reason, my braille watch has stopped running, so I telephone a friend to find out the name of a reliable jeweler.

During the course of the morning the postman delivers several letters. Since I have been expecting an important one, I telephone another friend and ask her if she can come over and read my mail.

In the afternoon I start to work on a talk which I am to give at my church in the near future. I find that I have forgotten one line of a poem I wish to use.

"Information" very courteously gives me the number of the nearest public library. I explain my difficulty to the librarian, and my problem is solved.

These illustrations could go on indefinitely. Friends telephone to give me addresses, telephone numbers, and even song words which I take down on my braille writer. This sort of thing goes on, with slight variations, in the homes of thousands of blind people throughout the country.

Many blind persons have trouble sleeping so they carry on long telephone conversations during the wee hours of the morning. In many instances these people are unemployed and, for various reasons, are unable to travel alone.

Time would indeed be heavy on their hands were it not for the telephone.

Radio, and even television, have done a lot toward making the lives of the sightless more abundant. Braille, and the long-playing talking book records have also done a lot to help pass the time.

Yet these things keep us busy within four walls, while the telephone brings us into immediate contact with the outside world.

We dial in the dark, but the telephone dispels darkness.

THE AUTHOR

The author has been totally blind since shortly after birth. Unlike most blind children of her generation, she was not sent to a state institution. She attended regular public schools in Los Angeles, which were equipped with Braille departments; that is, special teachers were employed to read to the sightless children, and give them whatever special training they needed.

Mrs. Tournear is a graduate of the University of California at Los Angeles and had hoped to be a school teacher. However, it was decided that blind teachers are not able to maintain the proper class discipline, so she decided to try her hand at writing. She has succeeded in selling one manuscript a year on subjects pertaining to the blind.

Mrs. Tournear lives a busy, active life. Her husband is also blind and they operate a newsstand in Santa Monica, Cal. They are buying a home, and keep it themselves.

Mrs. Tournear sings in her church choir, and teaches a Sunday School class. She states that many kind friends help her, and much of their help is given over the telephone.

DOW

Union Telephone Company likes PENTA-treated poles for long-lasting economy and cleanliness . . . This installation is near Houghton Lake, one of Michigan's premier resort areas.

clean *PENTA*-protected poles give users three big advantages *without* any extra cost

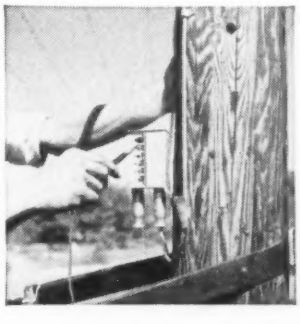
Here's why poles treated with clean PENTA* preservative are so different . . .

First: PENTA protects wood *years longer* against rot and termite damage. This is true under all climatic and soil conditions. Test plot records and user experiences show *no* preservative outlasts PENTA in effectiveness. This lowers your maintenance and replacement costs.

Second: PENTA leaves poles, crossarms and other materials *clean.* Their attractive, nonbleeding appearance pleases your customers. Installation is a faster, cleaner job.

Third: PENTA is a uniform compound; the preservative content is always *measurable.* This means PENTA-treated poles can be checked easily for the actual amount of protection present both at the time of purchase and *after* they've been in your lines for years.

And with all these distinct advantages, you can get PENTA-treated poles at *no added cost* above poles treated with less scientific, "hit-and-miss" preservatives. Ask your regular supplier for an order of clean *PENTAchlorophenol-treated poles and crossarms. PENTA appears in REA and RTA specifications. And for more information on these better-protected wood products, just write to THE DOW CHEMICAL COMPANY, Dept. PE847D, Midland, Michigan.



Clean PENTA-treated poles are preferred by line crews . . . they're easier to climb and work against.

you can depend on DOW CHEMICALS DOW

If you could look inside Automatic's extensive research laboratories, you'd see fast-growing activity in electronics.

Part of it is basic research, aimed at learning more so we can serve you better. Part is applied to improving existing products or developing new ones. Here and there, a development project originates with a customer's request for equipment to meet new needs; the result—a "miracle made-to-order."

Ideas are the foundation of this work. Our laboratories have been staffed by carefully selecting the kind of men who *have* ideas—men trained to think far ahead. Working singly and in groups, these men originate and discuss each new electronic device. Then, they put in long hours making it take shape on the drawing board, making it work in the "breadboard" stage, and perfecting it for manufacture. They make sure it will really benefit you, and that electronics *is* the best solution to the problem.

Research is costly. But the many thousands of dollars we put into it every year have proved their worth hundreds of times, in better telephone service, better business for telephone men. Keep your eye on Automatic for the latest and best in electronics.

For full details on any of the products shown here, write: *Automatic Electric Sales Corporation, 1033 W. Van Buren St., Chicago 7. Or, Call HAymarket 1-4300.*

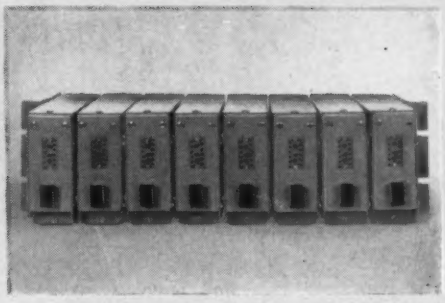
Automatic's researchers make "miracles-to-order" wit

Automatic's electronic experts are making great strides, doing much others said couldn't be done. Their work means space savings, power savings, maintenance savings —and more business for you!

ere are a few of Automatic's achievements in electronics...

ANSISTORS: Constant research on manu-cturing techniques aims at increasing tran-stor stability and life. Research on appli-tions is producing new products that sa.e wer, space, weight.

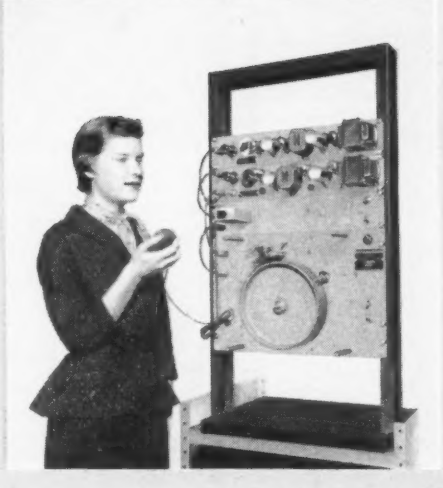
NEW TRANSISTORIZED TYPE 80 MONOPHONE: A completely self-contained transistor amplifier provides extra gain for hard-of-hearing subscribers. Transistor amplifier inside housing amplifies up to 16 times. Convenient volume control behind cradle. Amplifier draws power from line—needs no other power supply. Circular 1823.



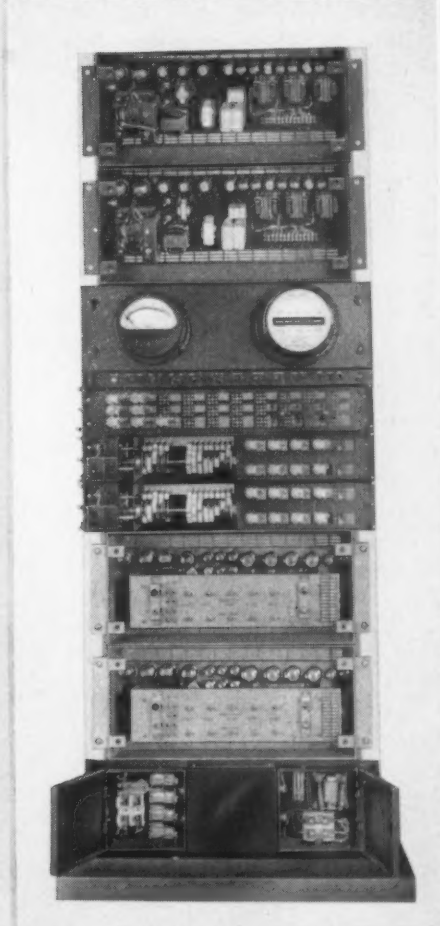
NEW TRANSISTORIZED VF REPEATER: Eight complete repeaters on a 19" shelf—only 5¼" high. Each provides maximum gain of 10 db on NL cable or open wire, and 6-8 db gain on loaded cable. Operates on 48-volt exchange battery or a few dry cells. Saves weight and space usually occupied by power supply. No heat dissipation problem—each repeater draws only one watt. No tubes to burn out.

lectronics!

TOMATIC RECORDER-ANNOUNCERS: Com-ete line of four fully-electronic announcers fers types for time announcements, weather lletins, "intercept" announcements, and e calls. Revenue-earning advertising can included where appropriate. Circular 1845.



EW TRANSISTORIZED OPERATOR'S HEADSET: mplifies caller's voice up to 16 times. Light-ight transistor amplifier measures only ½x1⅜x3". Amplifier in plug starts work-g when operator inserts plug in position ck. Needs no power supply. Circular 1823.



ELECTRONIC RINGING MACHINE: Generates electronically five ringing frequencies plus all tones required. Generating equipment has no moving parts to wear. Offers extraordinary frequency stability, low maintenance, and freedom from over-ring and cable noise. Circular 1734.

AUTOMATIC ELECTRIC

GENERAL SYSTEM

ORIGINATORS OF THE AUTOMATIC DIAL TELEPHONE

Courts and Commissions

California Commission Approves Rate Raise

An order authorizing the Colfax Telephone Exchange to increase rates to bring an anticipated return of 3.2 per cent was issued by the California Public Utilities Commission on Nov. 2.

The authorized increases, effective Nov. 21, are lower in some instances than had been sought by the company.

The commission noted the increase would amount to approximately $8,250, to bring a gross revenue of about $45,650, with total operating expenses listed at $38,700 and providing a net revenue of $6,950.

The commission said the increases are justified on the basis of permitting the company to operate without a loss. Evidence was presented showing the exchange incurred a loss of $6,000 last year.

"Dial operations, together with considerable proportion of new outside plant facilities, should greatly improve both quality and continuity of service following a short period of adjustment and a completely adequate and modern service is to be expected," the commission summary states in part.

The current rates, rates requested and the authorized charges, in that order, follow:

One-party residence, $3.00, $6.00, $4.30; four-party, $2.25, $4.25, $2.95.

One-party business, $4.00, $8.50, $7.25; two-party, no current grade, $7.00, $5.75; four-party, $3.00, discontinuance sought and granted with current subscribers upgraded.

C&P Asks to Pass Along License Taxes in Virginia

Chesapeake & Potomac Telephone Co. asked the Virginia Corporation Commission on Nov. 7 for permission to pass license taxes levied in localities on to subscribers living within those areas.

The company's request marked the second time this year that it asked to surcharge customers in localities where special taxes are imposed (TELEPHONY, May 14, p. 30; June 18, p. 30). The commission, last May, after a public hearing, granted the company permission to pass on the cost of gross receipts taxes to customers in areas where they were levied. That order affected about 120,000 customers in 15 localities.

Company officials emphasized that the new tariff change proposal does not increase telephone rates as such. The proposal was made, they said, so that special local taxes levied by a community would be paid only by customers in that locality and not by all of the company's customers.

Spokesmen for the company said several communities which had been charging gross receipts taxes had changed, or were in the process of changing, the taxes to license levies. This would circumvent the commission order of last May.

Two Minnesota Companies Gain New Rate Schedules

Two Independents — the Carlton County Farmers Cooperative Telephone Association, Cromwell, and the Eagle Bend Telephone Co.—were authorized by the Minnesota Railroad & Warehouse Commission on Nov. 1 to increase rates.

The Carlton County company, serving approximately 16 urban and 177 rural stations, was granted rates which would raise operating revenues from $3,900 to $6,313 and turn a deficit of $17 into net income of $676—a 3.7 per cent return on plant original cost of $18,300. Old and new rates are:

	Old	*New*
One-party business	$3.00	$5.00
One-party residence	2.00	3.00
Four-party residence	—	2.50
Rural multi-party (company-owned)	1.00	2.00

For the Eagle Bend company (serving 205 local and 265 switching stations), the commission approved a schedule of manual rates and a schedule for dial service to apply when cutover has been completed. Operating revenues, presently $11,011, will rise to $13,832 (manual) and then to $16,258 (dial). Net income, now $156, will rise to 1,365—a 3.41 per cent return on a $40,000 original plant cost; and then to $4,268—a 5.88 per cent return on an original cost of automatic plant of $72,500. After conversion, it is estimated that the local stations will be increased to about 234.

Following are the former rates and the two approved new schedules:

	Old Magneto	*Old Common Battery*	*Interim Manual*	*Automatic*
One-party business	$3.50	$4.00	$4.75*	$6.75
Two-party business			4.25*	6.00
Rural multi-party business			3.50	4.75
One-party residence	2.25	2.50	3.25*	4.65
Two-party residence		2.25	2.75*	3.90
Four-party residence	2.00		2.25	3.15
Rural multi-party residence	2.75		2.75	4.00
Mileage charge for service beyond the local base rate area, each ⅛ mile or fraction thereof:				
One-party			.40	.40
Two-party, each subscriber			.20	.20
Four-party, each subscriber			.15	.15

Note: All basic rates are to be billed monthly in advance and a discount of 25 cents will be allowed on all gross rates if paid on or before the 15th day of the month in which service is rendered.

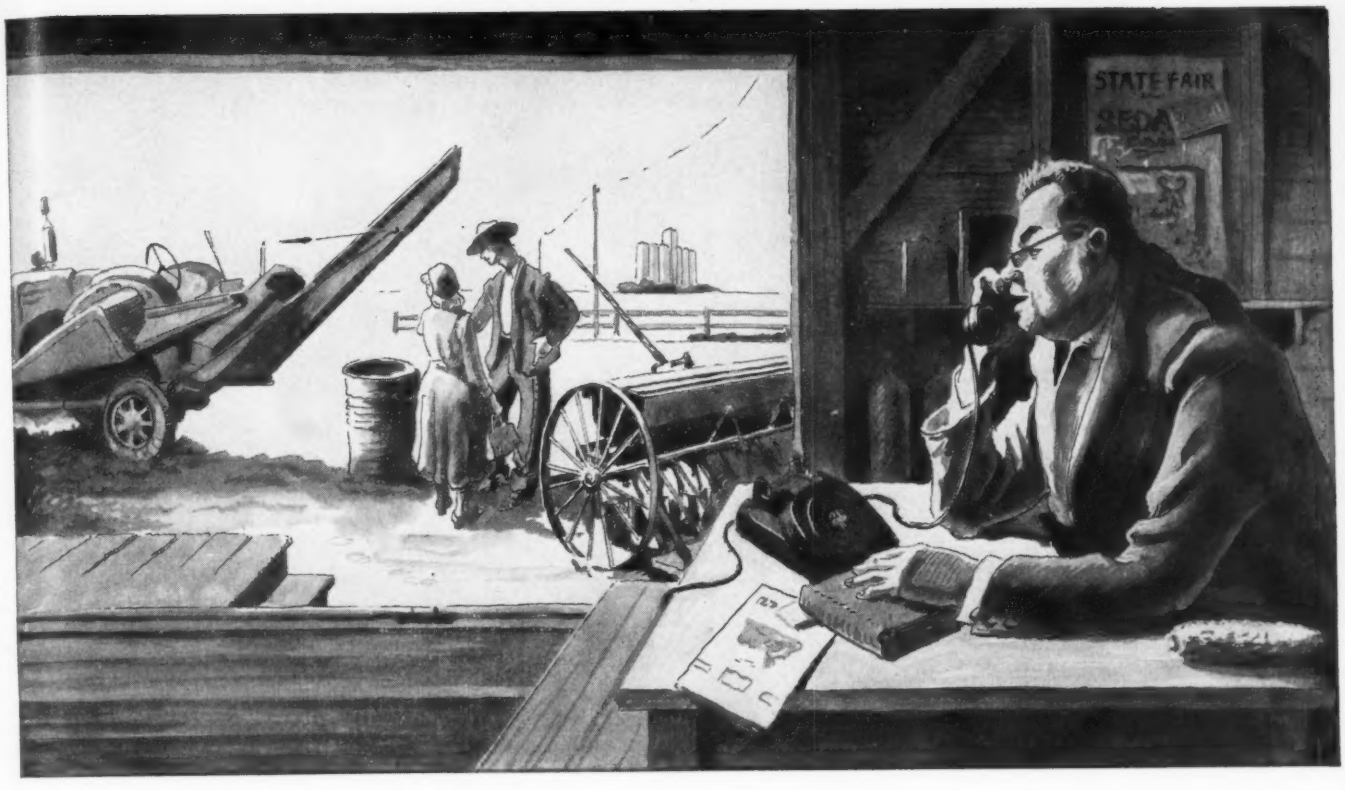
*An additional charge of 50 cents per month for Common Battery service. This service is optional to the subscriber.

N. J. Bell Services Needs Of Families with Teen-Agers

A new type of service will be offered by the New Jersey Bell Telephone Co. to the parents who can't use their telephones evenings because they are monopolized by the teen-agers in the family.

New Jersey Bell said it was introducing the service to meet a growing demand from residence customers for more than one telephone. The plan does not include party-line services.

The New Jersey Public Utility Commission on Nov. 1 approved new tariffs allowing the company to install an



PLANTER OF SEED

BY Thomas Hart Benton

Thanks to the telephone, there's one farmer who will get his seed planter repaired in time to start making a cash crop.

Getting needed service is only one of the many benefits the telephone brings to any farmer. And the Telephone Directory plants seeds for more efficient work and more comfortable living.

If your company serves rural subscribers, take a look at your present Telephone Directory. Does it give a farmer *all* the information he wants in the Yellow Pages? Could improvements be made with the problems of the farmer in mind?

One of our representatives can be helpful to you in answering these questions. For the Loomis Advertising Company is retained by many companies that successfully serve rural areas.

It is Loomis' business to build bigger and better directories, tailored to meet the needs of the communities they serve. The result, in every case, is more net revenue for the telephone company.

You owe it to your subscribers, your employes and yourself to find out the advantages of Loomis' Complete Directory Service. Write or call the Loomis office nearest you. There's no obligation on your part.

LOOMIS

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Over 785 cities and towns in 20 states are served by 257 Loomis-built directories.

We have commissioned Mr. Benton to draw four scenes of American Life. A limited edition of 9 x 15-inch prints suitable for framing has been ordered. We think they offer a nice public relations touch to your telephone office decoration. To get your Benton print FREE, write Wesley H. Loomis III, 810 Baltimore, Kansas City, Mo.

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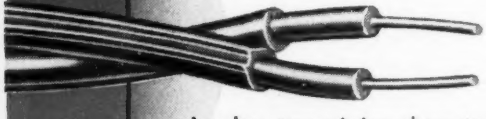
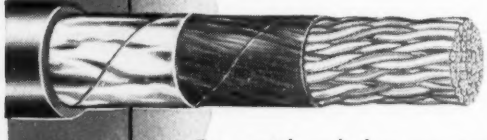
TELEPRENE®
DROP WIRE

This famous Whitney Blake wire set a new high for service life. Available in twisted pair, parallel and twin constructions, with Copperweld or bronze conductors.



TELESEAL®
UNDERGROUND WIRE

Low-loss transmission characteristics and stability in wet locations make this neoprene jacketed wire ideal for direct burial.



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EXCHANGE AREA CABLE

For aerial and duct use. Polyethylene insulation and polyethylene sheath. Excellent transmission qualities. Cable will operate even if sheath becomes damaged. In all required sizes including 202 pair.

DISTRIBUTION WIRE

Available in 3, 6, 11 and 16 pair, completely color coded. Has polyethylene insulation — polyvinyl chloride covering over each conductor. Low-loss transmission, low capacitance, high dielectric strength and excellent weather resistance. Light in weight, self supporting, easily installed.

INDEPENDENT

Well Built Wires Since 1899

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WHITNEY BLAKE COMPANY

New Haven 14, Connecticut

auxiliary telephone in a residence or apartment at rates ranging from 50 cents to $1.25 cheaper for a second telephone in accordance with existing rates in the area.

For instance, in Newark, anyone having two one-party flat rate residence telephones would pay $6.10 for one and $4.85 for the other, both costs not including taxes.

Both telephones have different numbers. They cannot be installed in areas where there is a list of subscribers waiting for telephones. Each telephone can be listed privately or the names and numbers can be published in the company's regular telephone book. There is no change in the present rates on the telephone now in use.

Commission President Hortense F. Kessler said that all subscribers were to be notified before Nov. 15, when the new tariffs went into effect, of a reduction on one of the telephones. The supplemental rate will be equal to the charge for two-party service.

General of the SW Gains Rate Increases in Texas

General Telephone Co. of the Southwest, San Angelo, Tex., was granted the following rate increases in Texas during October:

Exchange	*Old*	*New*
Turkey, dial, 263 stations		
One-party business	$7.00	$8.00
Two-party business	5.50	6.50
One-party residence	4.00	4.50
Two-party residence	3.25	3.75
Four-party residence	2.75	3.25
Quitaque, dial, 227 stations		
One-party business	7.00	8.00
Two-party business	5.50	6.50
One-party residence	4.00	4.50
Two-party residence	3.25	3.75
Four-party residence	2.75	3.25
Bryson, magneto, 155 stations		
One-party business	4.50	6.00
Two-party business	3.50	5.00
One-party residence	3.00	4.00
Two-party residence	2.50	3.50
Kyle, magneto, 178 stations		
One-party business	4.50	6.75
Two-party business	3.75	5.75
One-party residence	2.75	3.25
Two-party residence	2.25	2.75

Approves Borrowing by Oregon Independent

Northwest Telephone Co., Redmond, on Nov. 8 was authorized by the Oregon Public Utilities Commissioner to borrow up to $400,000 from the Chase Manhattan Bank of New York. The loan matures on Sept. 30, 1958.

Purpose of the loan, the commissioner stated, is to secure funds for reconstruction of and additions to plant and equipment and to pay a short-term bank note in the amount of $25,000 due the United States National Bank of Portland, Oregon.

Kansas Commission Oks Sale and Rate Raise

The Kansas Corporation Commission authorized the Mayetta Telephone Co. to increase its rates $1,260 a year on Nov. 9 (TELEPHONY, Oct. 29, p. 37), and also extended permission to the Lewis Telephone Exchange to purchase the Edwards County Mutual Telephone Co.

The Mayetta rates, affecting 150 customers, will be in force after 30 days. The company, a mutual, had asked for a $1,350 increase.

The new rates will be $1.75 for a one-party residence telephone, $1.25 for switching service, and $2.50 for one-party business service.

In authorizing the Lewis cooperative to acquire the Edwards County Mutual Telephone Co., the commission gave them authority to rebuild the exchange and convert the system to dial service.

Permission also was granted for the new company to borrow up to $193,000 from the federal government and sell $3,060 in stock locally. About 350 telephones now are in use through the exchange. It was estimated at the time of conversion that 412 stations will be served.

Pacific T&T To Take Over Two Park Telephone Systems

The Pacific Telephone & Telegraph Co. was authorized by the California Public Utilities Commission on Nov. 3 to take over the telephone systems in Sequoia and Kings Canyon National parks.

A commission spokesman said the company was requested to buy the systems, which serve a total of 118 telephones, by the National Forest Service.

Minn. Commission Authorizes Sale of Two Companies

The Minnesota Railroad & Warehouse Commission on Nov. 1 authorized Evald S. Elg to purchase the Finlayson Telephone Co.

The commission on Nov. 3 authorized J. Max Osborn to purchase the Eastside Telephone Corp., Isle, and to operate it under the name of the Eastside Telephone Co.

Asks to Serve, Issue Stock

The New York Public Service Commission was scheduled to hear on Nov. 14 the petition of Jasper-Steuben Telephone Corp., Jasper, to issue 2,500 shares of $10 par 6 per cent preferred stock and 2,500 shares of $10 par common stock, and to serve the town of West Union.

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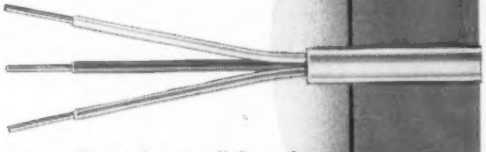

Both Plastite and neoprene types. Twisted, parallel and jacketed Plastite types as well as all-neoprene jacketed station wire. Parallel and jacketed types are designed for use with stapling guns

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New Corporation to Provide Service in N. C. County

Southern Bell Telephone & Telegraph Co. was authorized by the North Carolina Utilities Commission on Nov. 10 to revise its Southport and Wilmington service areas to make room for the new Atlantic Telephone Membership Corp., which will provide service for all sections of Brunswick County except the sections Southern Bell will continue to serve through its Southport and Wilmington exchanges.

The changes will become effective when the cooperative is ready to begin serving the Southern Bell customers it will take over as agreed with Southern Bell. The customers affected have signed up with the cooperative, the commission said.

The cooperative proposed to take over three subscriber-owned lines which now connect with Southern Bell near Jockeys Creek, the residents of Shallotte now served by long distance radiotelephones, and all sections of the county which have no telephone service. The cooperative will operate two exchanges in Brunswick County with toll service from these exchanges to places outside its territory.

This picture commemorates the first official call after the Island of Maui, Hawaii, was converted to 100 per cent dial service in September. Maui was the first of the Hawaiian Islands to have telephones in 1878, and is the fourth of the islands to have complete dial service. Putting through the call is Fred G. Manary of Maui, public utilities commissioner. Onlookers are (left to right): Mrs. Evelyn Sakamoto, chief operator; Louis Robello, plant manager; Peter James, Maui manager, and Vice President D. S. Guild, all of Hawaiian Telephone Co.

N. C. Company Asks to Issue Promissory Note

Central Telephone Co., Mt. Airy, N. C., asked the North Carolina Utilities Commission on Nov. 8 for permission to issue a $500,000 five per cent convertible subordinated promissory note to its parent company, Central Electric & Gas Co.

Proceeds of the note would be used to buy $500,000 worth of 5 per cent convertible preferred stock in Middle States Telephone Co. of Illinois in order to protect its voting control in that company. The note is held by Central Electric and Gas and would be converted later into $10 par value common stock.

Porto Rico Company Lists $2,000,000 Common Issue

Porto Rico Telephone Co., San Juan, registered with the Securities & Exchange Commission, 100,000 shares of $20 par common stock to be offered for subscription by stockholders at the rate of one new share for each four shares held.

The company reported to the SEC that International Telephone & Telegraph Corp., holder of 399,495 shares or 99.87 per cent of the outstanding stock, has waived preemptive rights to purchase any of the new shares. Underwriters will purchase the shares the parent company has waived and will reoffer them to the public, together with any other remaining unsubscribed shares.

Porto Rico Telephone listed Merrill Lynch, Pierce, Fenner & Beane as the principal underwriter.

Proceeds of the financing will be added to the general funds of the company and will be used to pay part of the costs of its construction program, the company said.

Illinois Commission OKs Rate Raise for Independent

The Illinois Commerce Commission on Oct. 20 authorized the Chesterfield-Medora Telephone Co. to put higher rates into effect on Nov. 1 (TELEPHONY, July 23, p. 33).

The new rates, after deducting amounts for wage increases and federal and state taxes, will leave the company $1,361 as return on investment, the commission said.

Ore. Company Incorporates

South Springs Telephone Association, Lexington, Ore., has been incorporated, it was reported on Nov. 10. Incorporators are Stanley Kemp, Ray Dolvin, Mary A. Doherty, Delvin O. Nelson and Gene Custforth.

Illinois Company Operated By Illinois Bell

The Illinois Bell Telephone Co. began operating the former McHenry County Telephone Co., Marengo, on Nov. 1 (TELEPHONY, Oct. 1, p. 33).

While officials of the two companies met in Chicago to complete final legal steps in the transfer, operators in Marengo began handling calls under Illinois Bell supervision.

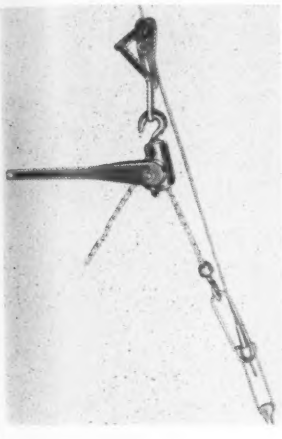
E. H. Welke, Illinois Bell manager of the territory, said that the company would begin soon to execute plans for improving service. The plans were formulated while the company awaited approval by the Illinois Commerce Commission and the Federal Communications Commission.

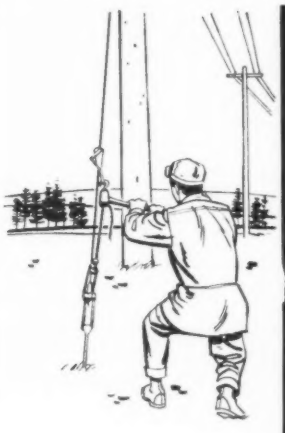
Noblesse Oblige

"It is never an easy and generally a thankless task to revise statutes which afford special benefits to a certain privileged class. But electric utility companies serve some 40 million customers, or about 80 per cent of the total number for the nation, and are duty bound to strive to obtain the enactment of laws that are fair to the customers' present interests and that safeguard their future interests as well."—HAROLD QUINTON, *President, Southern California Edison Co.*

Automatic's pointers for pole line construction

SHORT CUTS TO FASTER GUYING



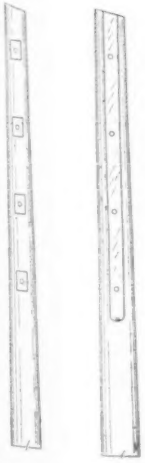


Reliable Strandvise and Coffing Hoist

Here is a combination to hold down your company's guying costs. All that is needed to dead-end the guy wire is to slip the strand through the nose of the Strandvise. No clamping hardware required.

Then with a Coffing Hoist (which is tested at 100% over its rated capacity), the strand is fed through the steel jaws of the Strandvise until the proper strain is reached. The greater the load, the tighter the hold. Telephone construction men are finding there is nothing faster or more efficient for guying purposes.

Cat. No.	Description	Each
S-7203	Strandvise 5/16"	$ 1.34
S-7205	Strandvise ⅜"	1.65
S-4792	Coffing Hoist ¾ ton cap.	53.00
S-7215	Pulling Hook	.90



Telephone Poles

Here's a money-saving tip: Since freight charges are a big part of the cost of poles, many companies include an order of creosoted cross arms to make up a carload shipment. The savings in freight charges are substantial. For prompt shipment send your order to your nearest Automatic Electric warehouse.

Angle Bolt Eye

With an Angle Bolt Eye attached to a cross arm bolt, three to five feet of guy strand can be saved. No wrapping wire around the pole; no need for strain plates, guy hooks, lags and nails. This all means savings in time, materials and labor. Angle Bolt Eyes are drop-forged and galvanized; will take ½ inch strand or under.

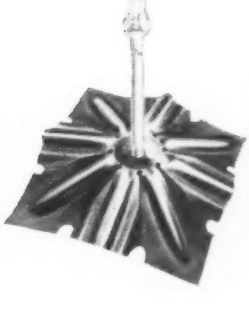
Cat. No.	For Size Bolt	Each
S-2164	⅝"	$0.57

Eye Anchor Rod

Eye opening at one end eliminates need for guy thimbles. Rod end is made to conform to the curvature of guy strand so wire can be pulled tight without distortion. Drop-forged, heavily galvanized, with clean threads.

Cat. No.	Size	Each
S-6164	⅝"x6'	$1.62

Chance 8-way Anchor



In a storm, good anchoring can often mean the difference between a pole line torn down or still standing up. Some helpful hints passed on by construction men are: Make sure the anchor hole is in direct line with the guy wire pull, that the expanding anchor is fully expanded, and that earth over it is firmly tamped down.

The Chance 8-way Anchor is preferred by many telephone companies for safer guy anchoring because it pushes eight blades into undisturbed earth all around the hole, with no wasted space between blades. This means complete balanced load distribution. Catalog No. S-2038 expands to 100 square inches.

Cat. No.	For Size Rod	Each
S-2038	⅝" or ¾"	$2.18

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IN THE NATION'S CAPITAL

Continued from page 18

George even goes so far as to declare that instead of a pushbutton millennium of electrically-controlled industry, the world is going to have to face the necessity of training monkeys to take over some of the duller jobs people have!

Sir George gives an example of what electronic technology is up against by citing the enormous "lot of electronics it would take to make a machine capable . . . of picking an orange from a tree without wrecking it." But with its good hand-eye coordination and a moderately intelligent brain, the monkey is "one of the best bargains nature has to offer us," he declares. "We ought to make more use of it and I have little doubt that we will," he predicts.

The physicist notes that picking crops of all kinds from trees and bushes represents tasks that use up a lot of human effort, are difficult for a machine to do, yet really do not require full human faculties. Sir George finds similar work—just as dull and just as difficult to handle by push-button automation—in factories. So Sir George would cultivate the wild species of monkeys, use advancing knowledge of genetics to step up their intelligence, improve their hands and make them more docile so as to relieve men of these dull tasks.

This "Brave New World" of Sir George may sound to some more like the world envisioned 2,500 years ago by Plato and Aristotle as they tried to project a society that would give men leisure and means to cultivate learning. It will also remind some of Frederick W. Taylor's unfortunate remarks earlier in this century in his "Principles of Scientific Management" about the ability of "stupid oxen" to handle many of the activities of industrial operations.

At least, it is hardly likely that any phase of telephone operations, or manufacturing would be a candidate for the monkey squad. But this writer has long suspected that some of these abstract painters and sculptors might be chiseling a bit with their home work by hiring monkeys, or doing something very much along that line, to turn out their "artistic" productions.

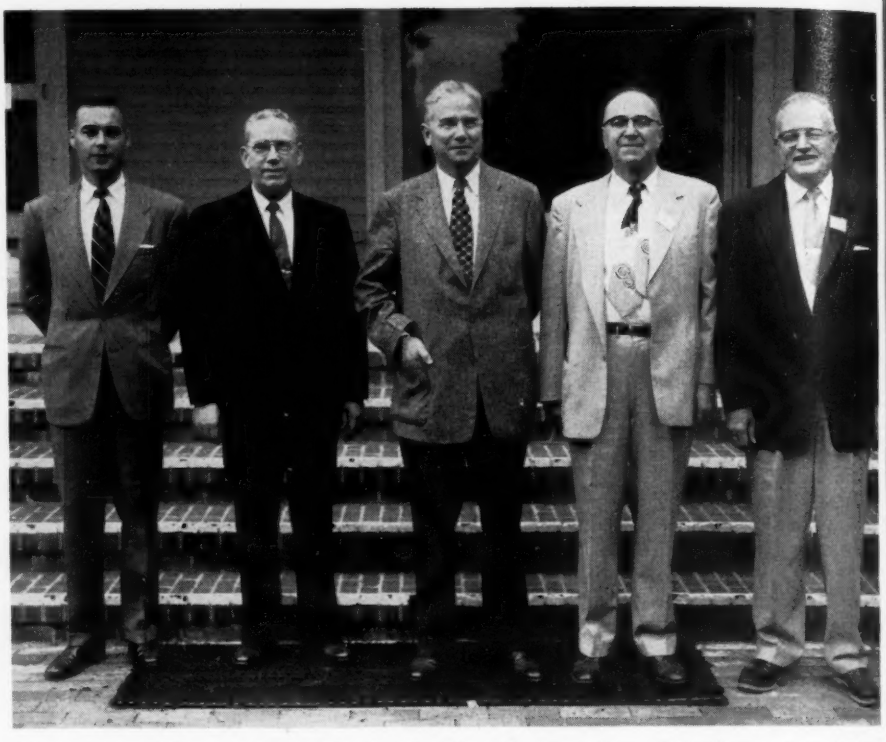
FCC Opens the Files

A good deal of the congressional investigating activity we read about in the paper these days must be considered in the light of political background. About one-half dozen of these committees and subcommittees which have been holding "hearings" during the recess of Congress are actually doing a little more than manufacturing campaign ammunition for the Democratic majority.

If the Republicans had control of Congress these committees would be digging up matters on the other side of these questions. But right now the Democrats are making sure that the presentation of testimony on "scandals" and "disclosures" are pretty well loaded and one-sided. That is why a good many of the government departments under control of the Republican administration have "clammed up" and refused to divulge information which the congressional committees claim they are entitled to investigate.

One agency which will not do so is the Federal Communications Commission, thanks to a ruling by Attorney General Brownell. The Senate Interstate Commerce Committee, headed by Senator Magnuson (D., Wash.) is preparing for a thorough investigation of the broadcasting industry, and its regulation by the FCC. This is not likely to be as one-sided or political as some of the other congressional investigating committees.

But the Interstate Commerce Committee will probably have some trace of the usual anti-business tone which has characterized the work of so many of the recess hearings by other committees during the past few weeks. We



Shown are officers of the North Carolina Independent Telephone Association elected at the group's 24th annual convention at Pinehurst, N. C. Left to right, are: H. J. Long of Tarboro, secretary-treasurer; Frank G. LaPrade of Martinsville, Va., first vice president; L. S. Blades Jr. of Elizabeth City, president; W. A. Carpenter of Hickory, second vice president, and John Cline of Southern Pines, third vice president.

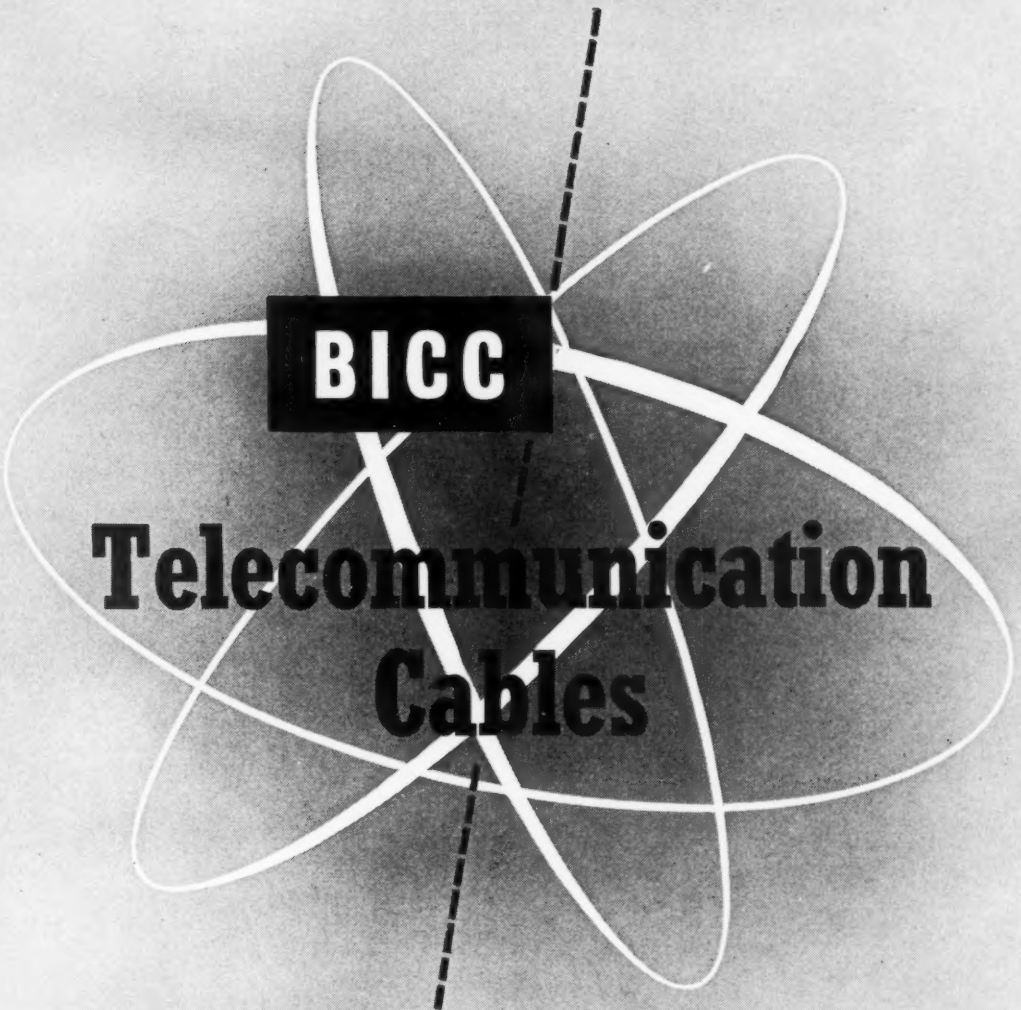
North Carolina Association Holds 24th Annual Meeting

L. S. Blades Jr. of the Norfolk & Carolina Telephone Co., Elizabeth City, was elected president of the North Carolina Independent Telephone Association at its 24th annual convention at Piñehurst, N. C., on Oct. 18. He succeeds R. E. McKelvey of Franklin.

Other officers elected include: Frank G. LaPrade of Martinsville, Va., first vice president; W. A. Carpenter of Hickory, second vice president; John R. Cline of Southern Pines, third vice president; and H. J. Long of Tarboro, secretary-treasurer.

New directors elected to serve three-year terms are: Mr. Blades; Mr. Cline; E. O. Freeman of Aberdeen; W. C. Harris of Lexington, and J. H. Snider of Denton.

Speakers heard during the convention included: Frank Newton of Atlanta, Ga., assistant vice president of Southern Bell Telephone & Telegraph Co.; Martin L. Black, professor of accounting, Duke University, Durham, N. C., and Dr. Walter J. Seely, dean of the Duke University College of Engineering.



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RADIO FREQUENCY AND OTHER ELECTRONIC EQUIPMENT INTERCOMMUNICATING CABLES; MAGNET WIRES

TEXTILE OR THERMOPLASTIC INSULATED CENTRAL OFFICE CABLES AND WIRES AND STATION WIRING CABLES

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FULL FLOATING SHIFTING DEE BODY BELT . . .

Bashlin Quality again is outstanding in this "safety first" body belt. Comfortable, with tools in easy reach . . . Doubly Safe because Bashlin Body Belts have the additional Nylon Safety Feature.

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You Can't Afford Anything LESS Than the BEST—
Buy **BASHLIN**
Highest Quality For Over 30 Years
Distributors in Strategic Areas in U.S.A.

EXPORT: Copperweld Steel International Co.
IN CANADA: Bell Electricord & Safety, Ltd., Toronto

Ask for . . .
CATALOG NO. 55

W. M. BASHLIN CO.
GROVE CITY, PA.

will know more about that next January, when the Senate interstate commerce hearings open up.

Anyway, in preparation for these hearings, Senator Magnuson asked the FCC to open its files on all matters under regulation of the FCC into which the committee is going to probe. So far, there is no indication that the Senate committee is interested in telephone matters, as such. The controversy appears to be pretty well confined to the radio and television fields.

But the FCC originally followed the same line taken by other federal agencies, and was reluctant to give out any information regarding individuals or individual companies. It took the position that such matters are confidential, and that it is the committee's duty under the law to keep them so.

Chairman Magnuson disputed this and appealed to Attorney General Brownell. He, in turn, decided that the FCC could not refuse the information required by the congressional committee properly authorized to investigate matters within the province of the FCC. Referring to the Communication Act of 1934, the attorney general's ruling states:

"The Communication Act does not impose any bar to disclosure. Section 412 of the Act specifically makes certain documents and information filed with the commission 'public records.'

"The legislative Reorganizations Act confers upon the Senate committee authority to conduct investigations into matters within its jurisdiction, and to require the production of such documents it deems advisable."

During the temporary absence of Chairman McConnaughey, the acting chairman of the FCC, Commissioner E. M. Webster, subsequently wrote a letter to Senator Magnuson which stated in part:

"The commission has reconsidered your committee's request for television station and network financial and affiliation data in the light of the attorney general's opinion, and we are now prepared to make the information available to your staff.

"We urge, however, that the confidentiality of the data be guarded insofar as possible.

"It has been our practice to release and publish any summaries of statistical total of the financial information contained in reports submitted by stations and networks, without disclosing the operating experience of an individual, identifiable station."

Magnuson takes the position that his committee has the authority to determine what should or should not be made public. That was not the way the Democrat Congressmen were talking several years ago, when the Republicans had control of Congress and were trying to dig into confidential files of federal agencies. But such inconsistency is an old story. It always turns upon the qeustion of whose ox is being gored.

South Dakota Exchanges To Be Sold to Co-ops

Officials of Central Telephone Co., LaCrosse, Wis., and Sanborn Telephone Co-op announced on Oct. 20 that their negotiations affecting the ownership of the Woonsocket, S. D., telephone system are nearing completion. Central owns the Woonsocket exchange along with others in the state.

The Central company reportedly has been negotiating for many months with Sanborn Telephone Co-op, Midstate Telephone Co., and Dakota Cooperative Telephone Co., all cooperatives, for the transfer of all its South Dakota exchanges in a joint sale. A loan has been approved by the Rural Electrification Administration for the Dakota co-op.

Mo. Company Permitted to Borrow from Stromberg

The Missouri Public Service Commission on Nov. 8 granted Cassville Rural Telephone Co., Inc., the right to borrow $200,000 from Stromberg-Carlson (TELEPHONY, Oct. 29, p. 36).

The money is to be used to finance the Barry county company's current improvement program, including conversion to dial service.

Eugene Alexander Appointed To Ohio Company Post

President William C. Henry has announced the appointment of Eugene Alexander as central office equipment superintendent for Northern Ohio Telephone Co., Bellevue.

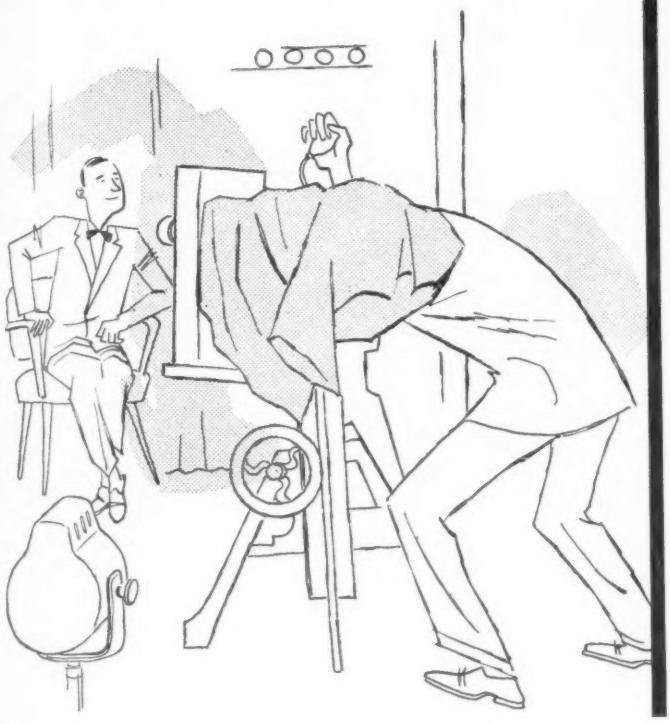
In his new capacity, Mr. Alexander will be responsible for the engineering of all new and additional central office equipment, including the equipment associated with toll and EAS trunks and will also supervise the maintenance of all central office equipment.

Mr. Alexander became associated with Northern Ohio Telephone Co. in 1934 as an installer. More recently he has served as an equipment engineer. His office is at Bellevue.

Purchases Missouri Company

E. C. Ewer, president and manager of Concordia (Mo.) Telephone Co., has announced that he purchased the company and took over active management of it on Nov. 1.

The Photographer takes better pictures . . .



while Peatrophone takes all the calls!

HOLD THAT POSE! While Mr. Photographer concentrates on his subject, the telephone rings . . . probably a customer to make or change an appointment . . . receptionist out on an errand . . . but this smart camera artist doesn't interrupt his sitting to dash for the phone. His Peatrophone answering instrument is handling the call efficiently and automatically, telling the caller that Mr. Photographer is occupied, and then recording the customer's message.

Before he started the portrait session, the photographer simply pressed a button on the Peatrophone, switching it "on duty." From that moment, "Pete" answered every call, repeating the appropriate talk-out message recorded by the photographer, and recording all messages from the callers.

After the poses were snapped (in less time, because there were no interruptions!) our photographer pressed another button and listened to the messages.

He's a camera expert but not an electronics whiz, so he appreciates the phonograph-simplicity of Peatrophone's operation. And good businessman that he is, he values the *permanent* recording of the incoming messages—just in case there's a confused customer who later forgets she changed her date by phone.

Most of all, when he's in the studio or darkroom, he can work better, knowing that "Pete" is minding his business at the phone.

You see, even the smallest business in your community can profit from Peatrophone service—and your company can, too, like so many others across the country. Write for information.

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TELEPHONE MANAGEMENT RESPONSIBILITY

Continued from page 20

politan areas can be clearly seen all across the country. Big metropolitan areas are starting to lose out while smaller cities and towns are registering healthy gains. In 21 metropolitan areas, jobs have increased 3½ per cent since 1947, compared with a 5 per cent climb in other parts of the nation. This record does not tell the true story, however, for without Los Angeles, which had a truly striking employment jump, the other 20 metropolitan areas had no increase at all over the last seven years, and some, notably Providence, Pittsburgh and New York, had substantial losses.

The telephone industry, which must plan its growth and development to conform with the changing patterns of population shifts, certainly must examine the movement of business and people with great care. Large amounts of money will be spent during the next few years on the expansion of our telephone plant. We must plan to spend this money in growing areas; we must estimate what the extent of the growth of new areas will be during the next several years; what will be the effect of raw products and new industries on section growth.

In this area, telephone management must employ its best thinkers and do its most careful planning for here we are confronted with a problem and a decision which could seriously alter our development pattern. National toll dialing requirements, location of toll centers, extended area service for community of interest groups—all these projects must be watched carefully in the light of this massive migration.

World Growth Important

In discussing any change in the location of people and business we must be constantly aware, I believe, of the growing population of the world. In the next 20 years, according to a projection of the United Nations, world population may increase by a billion. It took from 1900 to 1955 to bring about a similar increase. Applying this population increase to our own country, we find that a vast new market for telephone service is developing. The responsibility of management, it seems to me, is to determine how the telephone industry will effectively tap this potential market so that our rate of growth keeps close pace with the rate of population increase.

And, in this same field of expanding markets for our services, another situation was brought to my attention just a short time ago and that is with respect to the effect of the use of atomic power for commercial purposes. I suspect that, like most people, I thought of atomic power as a weapon of destruction, but at a recent session of the Public Utility Section of the American Bar Association, a half-day program was devoted to the commercial use of such power. If and when atomic power is commonly used to supply electric energy, what effect will it have on the location of industry and the development of communities and nations—consider the effect of abundant power in nations with great populations where power is now scarce because of fuel limitations. What will be the impact of such developments on the economy of the world, and, incidentally, the communications industry? It is something to think about, and seriously.

Public Relations Vital

Much has been written and many talks have been given on the subject of public relations in the telephone business. Arthur W. Page, until his retirement a vice president of American Telephone & Telegraph Co.; Keith McHugh, president of the New York Telephone Co., and one of the ablest spokesmen on the subject of public relations; and others prominent in the telephone industry have had their say about public relations.

With what they have said I heartily agree, but I believe any discussion such as this, which deals with the responsibility of management, would be remiss if it did not emphasize the need for good public relations planning. I am a great believer in establishing a policy which will guide us in each of our corporate actions.

In the case of public relations, I believe part of our public relations policy must include what Herbert M. Baus in his book, "Public Relations at Work," has termed the "unassailable objective." This goal is the target of every corporate activity, a goal against which there is no argument and about which there is no question. When the "unassailable objective" has been established, every action, every statement, every program, every event will be considered in the light of whether and how much it contributes to that objective.

While I believe firmly in this doctrine of "unassailable objective" as an integral part of a sound public relations program, let me add also that in

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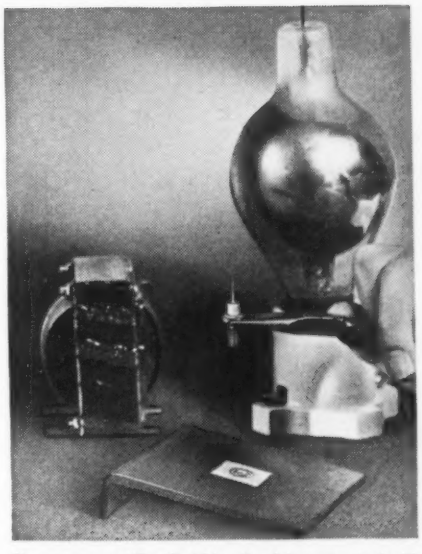
A GIANT FOR ITS SIZE !

Telephone science produces an important new rectifier

At Bell Laboratories one line of research is often fruitful in many fields. Latest example is the silicon power rectifier shown above.

Product of original work with semiconductors—which earlier created the transistor and the Bell Solar Battery—the new rectifier greatly reduces the size of equipment needed to produce large direct currents. It is much smaller than a tube rectifier of equal performance and it does not require the bulky cooling equipment of other metallic rectifiers.

In the Bell System the new rectifier will supply direct current more economically for telephone calls. It can also be adapted to important uses in television, computers, industrial machines, and military equipment. Thus, Bell Telephone Laboratories research continues to improve telephony—while it helps other fields vital to the nation.



Above, new rectifier (held in pliers) is contrasted with comparable tube rectifier and its filament transformer, rear. Mounted on a cooling plate, lower center, the new rectifier can easily supply 10 amperes of direct current at 100 volts, that is 1000 watts—enough to power 350 telephones.

BELL TELEPHONE LABORATORIES

IMPROVING TELEPHONE SERVICE FOR AMERICA PROVIDES CAREERS FOR CREATIVE MEN IN SCIENTIFIC AND TECHNICAL FIELDS

developing a public relations policy as part of our management responsibility, it is not enough to be right; it is necessary also to seem to be right. Let me give you an example of what I mean. The president of the American Telephone & Telegraph Co.., has said, year in and year out, that the policy of the AT&T is to provide the best possible telephone service, at the lowest possible cost. That policy is an ideal expression of the "unassailable objective."

The public can have no quarrel with such a policy. If the public believes that the American Telephone & Telegraph Co. is honestly following that policy line, the public relations battle is won. Public relations for the American Telephone & Telegraph Co. becomes then an effort to give proof of better telephone service at the lowest possible cost and to keep telling the public about it. That breaks down into happy employes, contented shareholders, favorable government relations, competent research, satisfied customers, in fact into every facet of the American Telephone & Telegraph Co. corporate life.

"Light of Day" Test

Any public relations policy which cannot be held proudly before the world is cancerous and will hasten the destruction of an organization. As Mr. Baus states further along in his book: "The final test of any public relations policy is the light of day." Management must develop the corporate public relations policy and must execute such a policy once it has been established. Public relations people, I believe, must function as assistants to management in the interpretation and adaptation of the policy.

There are just one or two other matters that have impressed me in my experience in the telephone business and that is the difficulty of inspiring all of our people from top to bottom with the incentive to not only do a good job, but to do it profitably. Perhaps, because of the very nature of our business, we develop a sort of civic service complex and while I have no quarrel with civic service I have seen enough of it to know that it does not by and large develop inspired performance. As managers, we should try to create incentive in all of our people and, believe me, in our business that is no small problem and, finally, I think managers should spend more time in just thinking.

In most businesses, and the telephone business is no exception, it seems to me there is a tendency on the part of management to become so immersed in details and routines that it doesn't take time to think—to question whether or not what we are doing is the best way and, in this connection, I always think of the philosophy expressed by my old friend Charles F. Kettering "that everything we do is wrong and there is a better way to do everything."

If management is going to succeed it must always be looking for the better way.

Ministers Use Telephone To Convey Messages of Help

When Michigan Bell Telephone Co. announced in September that Battle Creek residents could hear an inspirational message recorded by a local minister by dialing an exchange number, the response jammed the exchange and seriously overloaded the mechanical equipment.

Within one 18-hour period, telephone users in the city of 55,000 dialed the number 10,000 times, and so enthusiastically was the idea pursued, that customers with similar numbers reported an overflow of 50 wrong numbers, some at 3 and 4 a.m.

To relieve the situation, the minister cut his messages from one minute to 30 seconds, and asked callers to "please try to dial the right number, particularly in the early morning."

On the other hand, a minister in England who started a telephone service available to anyone thinking of committing suicide, is reported to wish to make a 24-hour service of it. His offer has elicited over 500 calls from people of all ages.

His case book, he says, shows three main causes of reaching the verge of suicide: domestic trouble, love and stress. Husband-wife calls, it appears, come at night when one or the other has walked out. Calls from the love-afflicted come from young people tortured with jealousy—at all hours. Stress calls, mostly from those over 40, often come at the lunch hour when callers feel they can no longer cope with their work.

Service Available Between U. S. and French Africa

Telephone service is now available between the United States and French Equatorial Africa, the Long Lines Department of American Telephone & Telegraph Co. announced on Nov. 2.

The radio-telephone service was opened to Brazzaville, the capital, via Paris.

The rate, excluding tax, for a three-minute conversation to French Equatorial Africa from any point in the United States, is $15.

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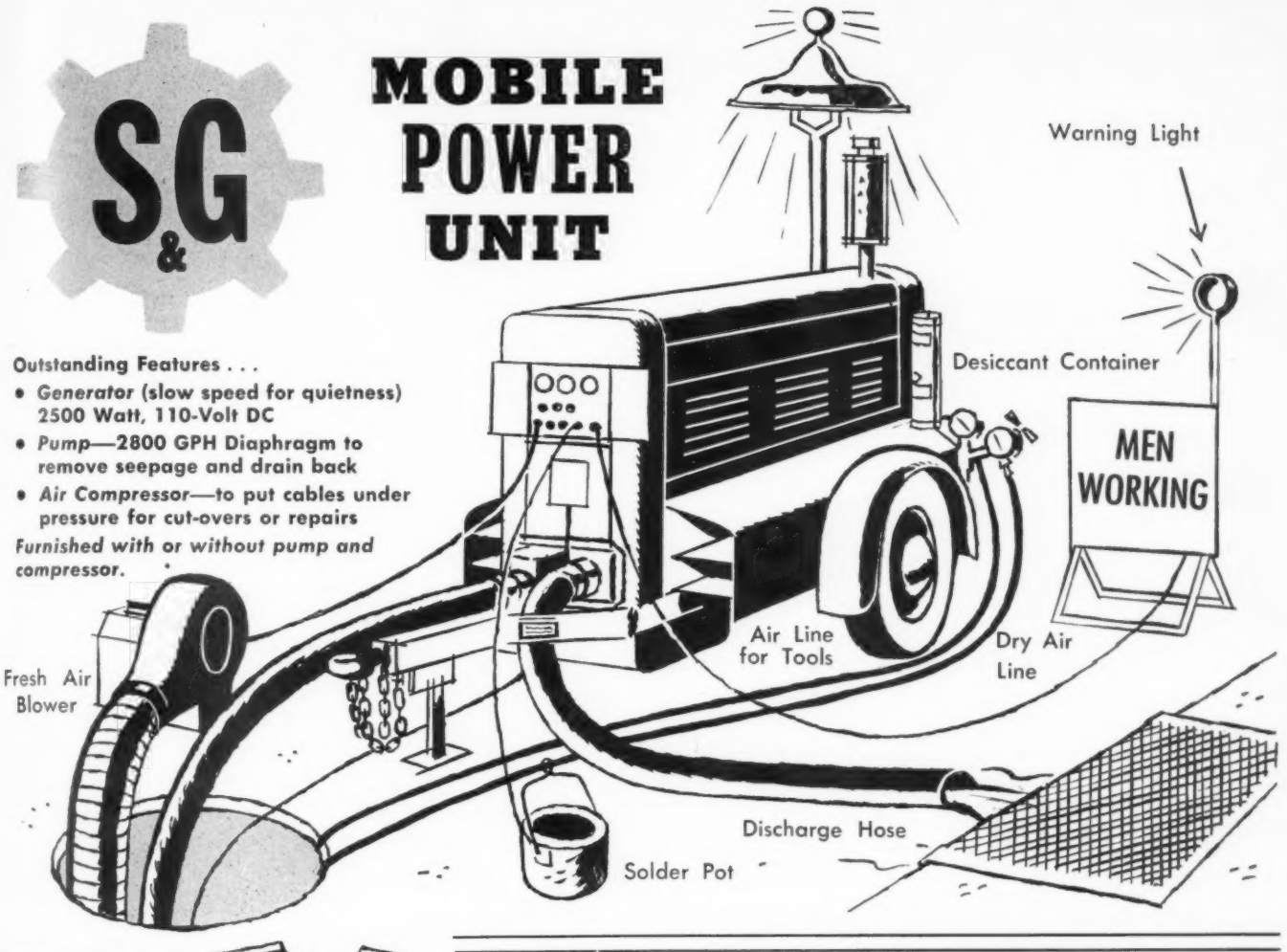

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- ***Generator*** **(slow speed for quietness) 2500 Watt, 110-Volt DC**
- ***Pump*****—2800 GPH Diaphragm to remove seepage and drain back**
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Furnished with or without pump and compressor.

- 300-Watt floodlight illuminates working area
- operates soldering pot and iron, electric and air tools
- electric blower to ventilate manhole
- supplies dry air for cable cut-overs, flash testing, etc.
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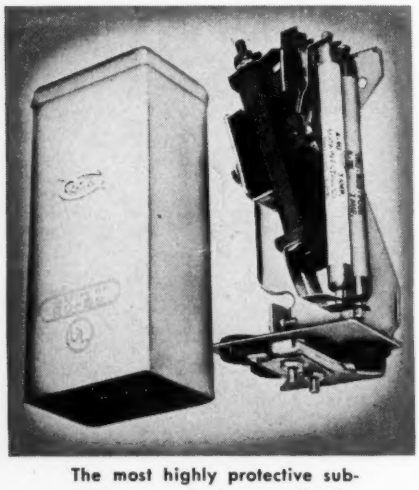
The few dollars you spend on *reliable* equipment today will be repaid a hundredfold in lower maintenance costs for years to come. Protect your investment with the double guarantee offered by Stromberg-Carlson. First, leading manufacturers build this equipment, and guarantee it. Second, because we recommend and sell this equipment to the telephone industry, we *also* guarantee its performance!

The Cook RO-9U sub-station protector

Protection plus—that's Cook Electric Company's type RO-9U sub-station protector.



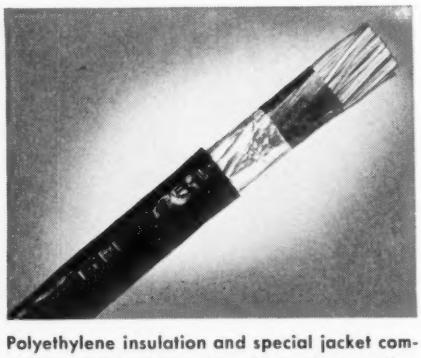
The most highly protective sub-station protector available.

This rugged unit consists of a heavy Bakelite base, two 7-amp. ceramic fuses, two famous Tru-Gap dischargers and two secondary dischargers which will ground a fault current when the fuses blow. These are all mounted on a sturdy steel bracket and covered with a heavy gauge, weathertight, zinc hood.

For the best in fused sub-station protectors, order the RO-9U.

Here's easy-handling cable—Aerial, burial or tucked in a duct

You can cut installation and handling costs, save yourself a lot of time, with Ankoseal lightweight plastic cable.



Polyethylene insulation and special jacket compound of this cable give plenty of protection.

It has polyethylene insulation that gives you excellent moisture resistance and thereby eliminates the hazard of wet cable. Another advantage of polyethylene is its high dielectric strength, which means less lightning trouble.

And to give you an unbeatable protection from weather, the Ankoseal 454 jacket compound is used. This special formula not only shrugs off climatic conditions, but also resists corrosion, electrolysis and vibration cracking.

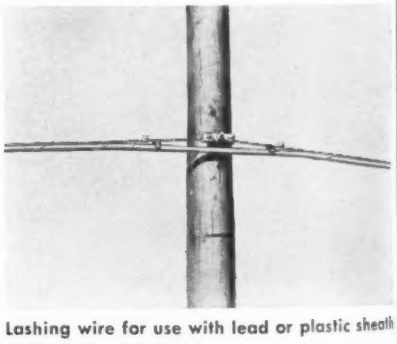
Ankoseal lightweight plastic cable is made for aerial (both messenger and self-supported), for duct and for direct burial installations.

Standard paired, quadded and composite constructions are available.

Your Stromberg-Carlson representative is prepared to fill immediate needs with this easy-handling, lightweight cable.

Lashing Wire for economical cable spinning

When you spin cable for suspension, the lashing wire is a key factor. That is why major telephone companies have gone to **Crapo** Corrosion-resistant Stainless Steel Lashing Wire for cable spinning. The 1200-foot coils of .045-inch diameter wire specially designed for use with modern cable lashers, make for over-all economy. Available also, in .065-inch diameter, 450- and 650-foot coil lengths.



Lashing wire for use with lead or plastic sheath cable and steel strand.

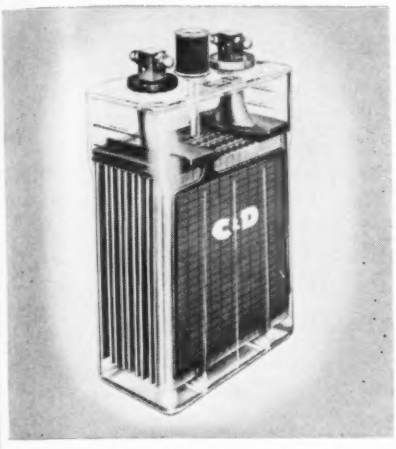
Crapo Lashing Wire comes in compact, easy-to-use thread-lay coils.

All **Crapo** Galvanized Steel Cable Lashing Wire is extra-heavy "C" coated for longer life. Furnished in .091- and .061-inch diameters.

Made by Indiana Steel & Wire Co., Inc. Made available to you by Stromberg-Carlson.

These two battery types give you decades of good service

Here's a dependable power supply for you with a life expectancy of 25 years! It's the C & D Plasti-



This low-cost PlastiCell battery has life expectancy of 14 years. Its PlastiCal counterpart will last you 25 years.

Cal telephone battery, and when we say it will last 25 years, we're thinking about **full float service.**

You get this extra-long life because C & D PlastiCal (lead-calcium grids) batteries have an exclusive suspended and supported plate construction.

If a 14-year life expectancy will fill your needs, C & D has an economical battery for that, too. It's the PlastiCell battery, using high-tensile lead alloy grids.

In the picture, you see one of these PlastiCell batteries. It's the CE-11 and has a 300 A.H. capacity. In PlastiCal, specify PCE-300.

Both PlastiCal and PlastiCell are available in other capacities. You can order them from your Stromberg-Carlson representative.

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MULTIMETERS FOR TELEPHONE TESTING

Concluded from page 23

high resistance will ordinarily give a varying reading on the ohmmeter. The lowest point of the varying reading is the best value to use. This method is, of course, suited also to the measuring of crosses. Measurement of grounds by this method can be considered only a rough approximation due to resistance of ground connections.

Another method for locating shorts is illustrated in *Fig. 9.* This method is applicable only on common battery lines and uses the voltage drop along the line as an indicator to the trouble location. The voltage is measured at various points along the line. The voltage gradually decreases from the central office to the short, then stays constant after the short has been passed.

If the line can be opened conveniently at some point, the milliammeter can be inserted in series with the line, and the resistance, to and including the fault, obtained by dividing the voltage by the current. The current is the same in all parts of the circuit and in this problem is equal to 50 ma or .05 amperes. At the point on the circuit where the voltage is 10 volts, the resistance is 10 divided by .05 or 200 ohms. If the resistance of the fault varies between measurements, the results of the tests are of course only approximate.

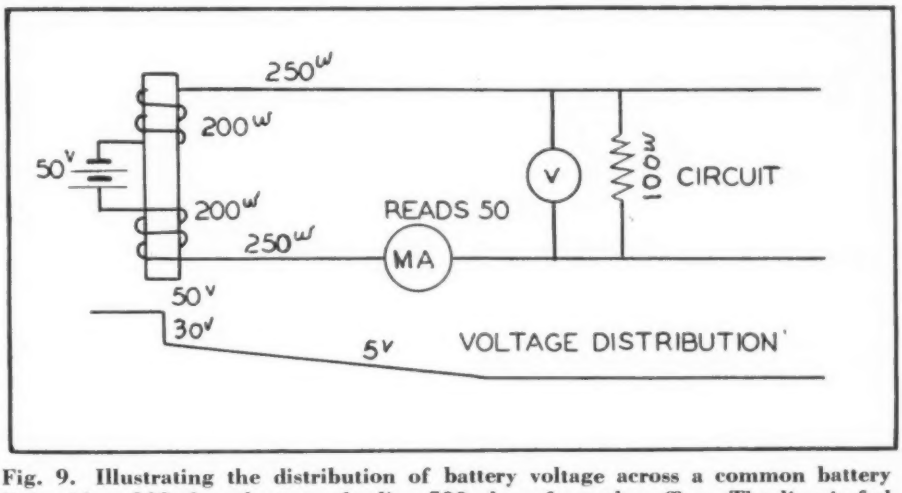


Fig. 9. Illustrating the distribution of battery voltage across a common battery line with a 100-ohm short on the line 500 ohms from the office. The line is fed by a 50-volt battery through a 400-ohm coil.

Peninsular Company Installs 250,000th Telephone

With the quarter-millionth telephone installed recently on the Florida west coast, Peninsular Telephone Co. has registered a net station gain of 50 per cent during the past five years.

The company's historic telephone was installed in Temple Terrace, a suburb of Tampa, at the home of Fred Grantham, an engineer for the Atlantic Coast Line and a substitute minister for the Baptist clergy.

In presenting the duo-tone color instrument to the Granthams, Carl D. Brorein, Peninsular president, said that the telephone company in arriving at the quarter-millionth station, had registered a net gain of 47 telephones every day during the past ten years, or 17,000 telephones annually.

"This is an indication of the growth and progress that has been recorded here in west central Florida," Brorein said.

"It might be of further interest to the people throughout our communities," Mr. Brorein continued, "to know that in achieving a 300 per cent increase since the close of the war in telephones served, we have also had to increase our capital investment from 15 million dollars to 67 million dollars. This increase is a reflection of not only our modernization program but also of the greatly increased costs of material and equipment."

In commenting on the corresponding increase in telephone traffic during the past few years, Mr. Brorein said that in October 1945, the telephone company was completing about 15 million calls monthly, whereas in October 1955, this figure had increased to over 36 million calls monthly.

Levelling Off Process

"Economy, lower taxes, and honest money are having their effect. The transition of our economy to a lower level of governmental spending is progressing smoothly, and private sectors are taking up the slack."—DAVID M. KENNEDY, *Chicago banker.*

DETERMINING CREOSOTE IN POLES

Continued from page 28

cubic foot up to 8 pounds per cubic foot:

Poles should be given a heavy groundline and soil poisoning treatment with creosote, pentachlorophenol, copper napthenate, or mixtures of these or other oil borne preservatives.

Creosote Content above 8 pounds per cubic foot up to 12 pounds per cubic foot:

Poles should be re-inspected within 5 years.

Creosote Content above 12 pounds per cubic foot:

Poles would be expected to give at least 15 years service life before re-inspection would be necessary.[4]

These recommendations are based on present knowledge. Considerable data will have to be collected in the future before limits can be set with more confidence. The test kit described above will be of immense value in developing this information.

Creosoting Plant Inspection. In addition to its use as a tool for inspection of poles in service, the test kit can be used for inspecting freshly treated poles at creosoting plants.

Inspection procedures used at treating plants are:

(1) Determination of the depth of penetration of the creosote into the poles. The depth of penetration is determined by boring the poles and measuring the borings with a rule. If the depth of penetration is below that which is known to be required to obtain satisfactory life from the poles, they are returned to the creosoting cylinder for re-treatment.

(2) Determination of the amount of creosote retained by the charge as a whole. The amount of creosote retained is found by measuring or weighing the tank containing the creosote before and after it has been used on the charge, the difference being assumed to be the amount that was retained by the charge.

For example, if 100 35-foot, class five poles having a volume of 1,560 cubic feet retained 12,480 pounds of creosote, the retention in the poles is assumed to be 8 pounds per cubic foot.

However, analysis of the individual poles from the charge would show retentions varying from as low as 3 to as high as 15 or 16 pounds per cubic foot.

Retention Tests More Feasible

The poles receiving very low retentions of creosote are largely responsible for the early failures that occur in creosoted poles since the penetration test catches most of those that have insufficient depth of penetration. To date, checking of retention in individual poles has been an impossible task for routine plant inspection, but with the rapid test method described above, this is now possible. The test can be run on the same set of borings that is taken to measure penetration.

Just as in the case of poles in service, any section of the boring may be taken for the test, provided the set of standard tubes is made up to represent that amount of boring. In actual practice only one standard tube would be required for the test.

For poles being treated to meet a specification requiring 8 pounds per cubic foot retention, a minimum average retention for any single pole could be set at 6 pounds per cubic foot. A pole that has an average of 6 pounds of creosote per cubic foot based on the entire sapwood, will have approximately 10 pounds per cubic foot in the outer ½ inch.[7] So if the outer ½ inch of boring is used in the test, the standard tube would contain an amount of creosote equivalent to 10 pounds of creosote per cubic foot.

If the tube containing the ground-up boring diluted with solvent were lighter colored than the standard, then the pole would be considered to have failed the retention test and would have to be re-treated. If it were darker, the pole would be accepted.

Plant Standards

Standards for use at the creosoting plant would be made up from the creosote used by the plant. As in the case of creosote extracted from poles in service, however, exact duplication of the creosote in the standards to that used in the plant is not absolutely necessary.

Tests with a number of different creosotes with distillation residues ranging from 16 to 40 per cent have shown that a given creosote can be checked against standards made up from any of the other creosotes and the results will be within ± 1 pound per cubic foot of the amount actually present.

When the same creosote is used for preparing the standards as that present in the poles being tested, the amount determined by the test kit will be within ±¼ pound per cubic foot of that actually present.

Two different borings taken from the same pole even though close to one another will show variations in creosote content greater than those cited above.

This test is also being studied with a view toward applying it to preservatives other than creosote such as pentachlorophenol and copper napthenate as well as water soluble salts.

STANDARD TELETYPEWRITERS AND RECTIFIERS

A wide range of standard teletypewriters and accessories are available for early delivery from current production. These machines are assembled from parts produced by a leading American manufacturer and are standard and interchangeable in every way. They can be supplied in either commercial or military packing, with instruction books. All units carry a 12-months' guarantee. We stock spare parts.

The following types of teletypewriters are available:

- Model 15 Page Printer.
- Model 19 Page Printer.
- Model 14 Tape Printer.
- Model 14 Typing Reperforator
- Model 14 Transmitter-Distributor.
- Type TG-7A or TG-7B Teletypewriter (U.S. Signal Corps version of Model 15)
- Type TG-26 Teletypewriter (U.S. Signal Corps Typing Reperforator Transmitter-Distributor Set).
- Type TT-7 Teletypewriter (U.S. Signal Corps version of Model 19)

Teletypewriters can be supplied in the following optional arrangements:

- Send and receive or receive only.
- 50 or 60 cycle synchronous or governed, or d-c governed motors.
- Holding or pulling-magnet selectors.
- Line relay and relay bracket optional.
- Tables optional.
- Rectifiers optional.
- Any standard keyboard and type-pallet arrangement.
- Any standard arrangement of functions.

Rectifiers: Input 115v 50-60 cycles A.C. Output 115 volts D.C.

Regulated		Non-Regulated	
Type	D-C Amps.	Type	D-C Amps.
REC-13	0.6	F11360	0.2
F3901	0.8	REC-4	0.25
RA43	4.5	RA-87	0.4
		F8387	0.6
		KS5988	0.8

RADIO ENGINEERING PRODUCTS
1080 UNIVERSITY STREET, MONTREAL 3, CANADA
Telephone: UNiversity 6-6887 Cable Address: Radenpro, Montreal
MANUFACTURERS OF CARRIER-TELEGRAPH, CARRIER-TELEPHONE AND BROAD-BAND RADIO SYSTEMS

Summary of Test Uses

By means of this test the pole line engineer will be able to make reliable and uniform decisions regarding poles in line or poles that have been removed from service because of line changes. He will be able to avoid the costly mistakes that are often made when poles having in them many more years of service life, are discarded; or when poles are reset which do not have sufficient creosote left in them to protect them in their new location and which rot off in a few years.

If his company is engaged in a program of pole spraying or groundline and soil poisoning treatments, he will be able to designate with confidence which poles should be treated. Moreover the pole user can use the test for inspection of his poles at the creosoting plant to assure that every pole that he buys has the proper amount of creosote in it that is needed to obtain maximum service life.

References

1. Report of pole service committee. American Wood Preservers Association Proceedings, vol. 35, 1939, p 314.

2. Pole Testing by New Methods and Equipment. Bryce Brady. Presented before the Transmission and Distribution Committee of the Edison Electric Institute, Washington, D. C., February, 1955.

3. Relations between Gage Retentions and Amounts of Creosote Extractable from Borings Taken from Treated Pine Poles. R. H. Baechler. AWPA Proc. vol. 50, 1954, pp 113-119.

4. Creosote Retention as Determined by Toluene Extraction of Treated Wood. A. H. Hearn. AWPA Proc. vol. 50, 1954, pp 22-135.

5. Distribution and Composition of Creosote in a Pole That Has Been in Service for 23 Years. J. W. Andrews, S. N. Buco, and P. O'Brien. AWPA Proc. vol. 51, 1955 (page number not yet assigned).

6. The Oxidation of Creosote—Its Significance in Treating Operations. M. S. Hudson and R. H. Baechler. AWPA Proc. vol. 36, 1940, pp 74-111.

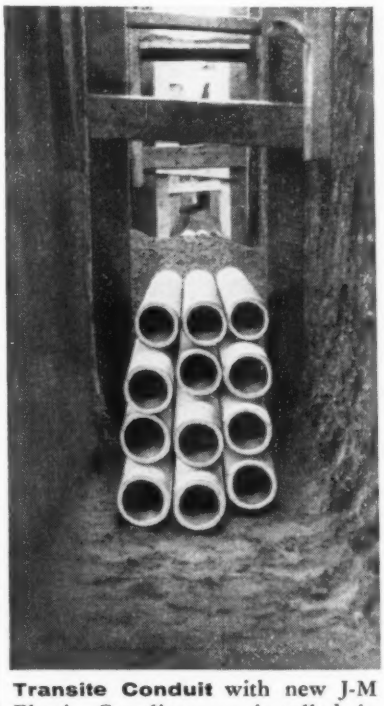
7. Impregnation and Distribution of Creosote in Southern Pine Poles. M. S. Hudson. AWPA Proc. vol. 51, 1955 (page number not yet assigned).

General of N. Y. Employes Receive La Croix Award

A New York state truck driver continues on the job, thanks to the quick thinking of five employes of the General Telephone Co. of Upstate New York, Inc. The driver, pulling a load of heated asphalt in a tractor-trailer

Long, lightweight lengths of Transite Conduit with new J-M Plastic Coupling ready for far west telephone installation.

...makes **Transite Ducts** cost far less to install



Transite Conduit with new J-M Plastic Coupling are installed in direct contact, saving trenching time and backfilling.

This unique plastic coupling, developed by Johns-Manville especially for telephone service, enables you to install Transite® Conduit at greatly reduced cost. It provides the following advantages:

1. **No separation between ducts**
2. **One backfill instead of several**
3. **Narrower, shallower trench**
4. **Faster installation**
5. **Watertight, silt-tight joints**
6. **No joint sealer**

Furthermore, the tight joints formed by this J-M Plastic Coupling enable you to use pneumatic rodding instead of expensive hand rodding—and eliminate cleaning.

Major telephone companies find that Transite Ducts provide better cable protection at lower cost. Made of asbestos-cement, they can't rust, are immune to electrolysis, resist corrosion and all normal soil stresses. The light 10-foot lengths are easy to install . . . reduce the number of joints in the line.

For more information, call your nearest J-M District Sales Office or write Johns-Manville, Box 60, New York 16, New York. In Canada, Port Credit, Ontario.

Johns-Manville

TRANSITE DUCTS

MADE OF ASBESTOS

rig, was saved from serious injury when his truck overturned near Charleston, N. Y., crushing the cab and pinning him against the dashboard.

On Aug. 12, Harold Oare, construction foreman, and Arnold J. Hagedorn, Albert F. Strouse, Arthur Willis and Frank Zayicek, members of the construction crew, were eating their lunch a short distance from the point where the accident occurred, when a passing motorist reported that a truck had gone off the road, taking down a pole and disrupting telephone service. After Mr. Zayicek climbed a pole to call the state police for assistance, the crew went to the scene of the accident to see if they could be of service.

Although they were not the first ones on the scene, the earlier arrivals did not have any means of freeing the driver from his cab. Taking charge of the situation, the telephone employes attached a winch line to the cab of the truck, while Oare lifted up on the roof of the cab to guide the winch operation. Hagedorn directed traffic. Strouse, Willis and Zayicek attached a rope to the shifting lever, pulling it free from the driver's body so the driver could be extricated from the cab feet first.

Laying the driver carefully on the ground, the men massaged his arms and legs which had become numb from lack of circulation. The attending physican stated that the prompt action in freeing the driver and rendering first aid undoubtedly saved the driver from serious injury to his arm and possible loss of an eye.

Each of these men was presented a LaCroix certificate of meritorious service, (awarded to employes of the General Telephone System who have performed acts of unusual merit) by R. M. Wopat, president of the General Telephone Co. of Upstate New York, Inc.

AT&T Seeks to Construct $33,000,000 in Facilities

A "blanket" application seeking authority to construct about $33 million dollars in supplemental communications facilities was submitted to the Federal Communications Commission (FCC) on Oct. 31 by the Long Lines Department of American Telephone & Telegraph Co. and 19 Bell System associated companies.

An announcement released by Long Lines in New York said the proposed program would provide 2½ million channel miles of telephone facilities, 1,270,000 miles of telegraph channels and extensive additions in audio channels for radio and television networks.

The application also touched on Bell System plans for construction of a number of new routes to the nation's larger cities. Ralph L. Helmreich, Long Lines director of operations, said these routes would travel through open country for most of their length, interconnecting with existing lines.

The announcement said the proposed construction would be undertaken in 1956 and would represent an important part of the Long Lines' program for the coming year. Major cable projects listed in the filing were:

Construction of a coaxial cable between Atlanta and Augusta, Ga., for telephone and television service.

Equipping of existing coaxial cable routes between Augusta, Ga., and Charlotte, N. C., and between Indianapolis, Ind., and Louisville, Ky., with a system which would triple their present capacity.

Provision of line facilities into Wayne, Pa., which is to become the second long distance switching center in the Philadelphia area.

"Facilities proposed in the program would provide for 4,500 additional telephone circuits to handle the increased traffic," he explained.

Long Lines would bear 27 million dollars of the cost outlined in the application. Other companies participating in the program are: The Bell Telephone Co. of Pennsylvania; Bell Telephone Co. of Nevada; The Chesapeake & Potomac Telephone Co.'s of Baltimore City, Virginia and West Virginia; The Diamond State Telephone Co.; Illinois Bell Telephone Co.; Indiana Bell Telephone Co.; Michigan Bell Telephone Co.; Mountain States Telephone & Telegraph Co.; New Jersey Bell Telephone Co.; New York Telephone Co.; Northwestern Bell Telephone Co.; The Ohio Bell Telephone Co.; The Pacific Telephone & Telegraph Co.; Southern Bell Telephone & Telegraph Co.; The Southern New England Telephone Co.; Southwestern Bell Telephone Co., and Wisconsin Telephone Co.

A Sobering Thought

"The American social system is based upon the private ownership of wealth, upon private ownership of the means of production, distribution, and exchange. The principal commodity in our industrial system is power, electrical power, as it is today; perhaps atomic power, as it may be in the future. Coal and water are the principal natural resources that go into the manufacture of electricity. Coal is privately owned in the United States. All the products of atomic fission are government owned."—GEORGE SOKOLSKY, *Columnist.*

It's the "Cat's Meow"
For ELIMINATING
Service Calls!
Lorain
HOWLER
You wouldn't think a cat's "meow" could decrease your service calls, but the Lorain Howler, which produces a signal tone very similar to a cat's "meow", does just that! Should your subscriber leave his receiver off the hook, the Lorain Howler will start its "meow" and will continue until the subscriber locates the source of the noise and replaces the receiver, restoring the line to service.
WRITE FOR BULLETIN 167
LORAIN PRODUCTS CORPORATION
1122 F ST. • LORAIN, OHIO

JOINT MEETING

Concluded from page 25

Swanson of Charlottesville; Kermit S. Land of Pungo; Conrad J. Logan of Tarboro, N. C.; Stanley A. Owens of Manassas, and C. W. Yancey of Disputanta.

The Virginia directors elected the following officers: President, Mr. Draper; first vice president, Mr. Logan; second vice president, Mr. Robertson, secretary-treasurer, Mr. Cavendish.

The West Virginia association elected or carried over the following directors: Carl Ballentine of Pine Grove; J. M. Bear of Marlinton; E. S. Filler of Davis; Paul Miller of Romney; J. W. Null of Wayne; H. H. O'Neal of Oak Hill, and Donald Roush of New Haven.

The West Virginia directors elected the following officers: President, Mr. Null; first vice president, Mr. Filler; second vice president, Mr. Roush, and secretary-treasurer, Mr. Miller.

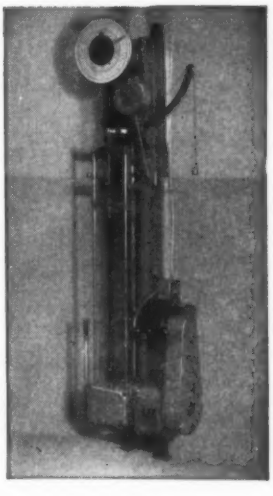
Public Power — Who Subsidizes Its "Economies"?

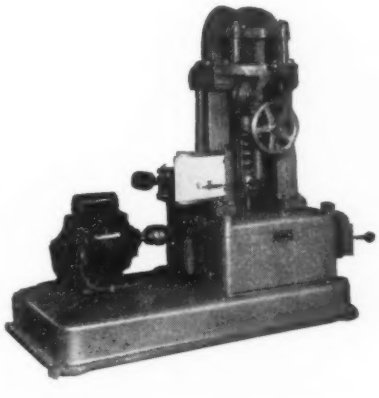
"So far as the economics of socialized power are concerned, two misapprehensions should be cleared away. First, it is argued that public power is cheap power. But that cheapness is purely illusory. It is the result of the fact that public power plants are built with tax money, are either wholly or largely free of taxation, and are given many other subsidies and special privileges unknown to private enterprise.

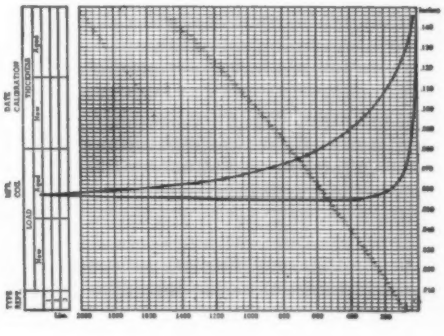
"Second, public power advocates would have us believe that the cost of electricity is a very vital matter indeed. The truth is that this cost amounts to about one per cent of the average family budget. The family's electric bill runs to 18 cents a day, while its daily tax bill (including both direct and indirect levies) is estimated at $5.00. So a mere 4 per cent cut in the tax bill would add as much to the average family's disposable income as would cancellation of the entire electric bill!

"Why, then, is the power issue kept alive and burning? There is only one logical answer. For the most part, socialized power promoters also favor many other policies which would make big government still bigger and more powerful. And nationalization of the nation's electric supply would be a sure way to put every farm, every business and every home at the mercy of a government monopoly run by an ambitious bureaucracy."—INDUSTRIAL NEWS REVIEW.

With labor and maintenance costs much higher today than some years ago, it is natural for telephone companies to insist on installing drop wire that will give long service. Dependability in Lowell's complete line of Telephone Wires is assured by a technical staff using many physical tests to determine the effect of heat, aging, tensile strength, compression, cold, acids, oils, moisture and abrasion. Tensile test machine at right which tests for adhesion enables us to guarantee that the adhesion bond between the insulation and conductor is stronger than the conductor itself.







Compression testing is essential in high grade insulated telephone wires. All Lowell parallel neoprene jacketed drop wire is tested in our laboratory to withstand pressure of 2000 lbs. or more before the insulation jackets are crushed. Since resistance to compression determines the quality of the adhesion these tests prove that Lowell Drop Wire will stand the crushing action of the P Clamp without cracking of the insulation or jacket, thus insuring dependability and long life in service.

"Fine Wires Only"

LOWELL INSULATED WIRE DIVISION
OF The Ovenlakes Corporation

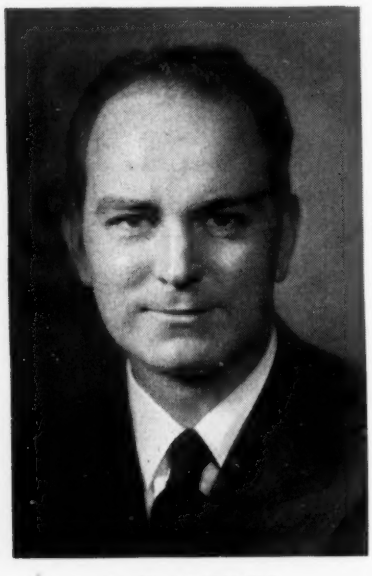
Automatic Electric and Leich Announce Executive Changes

LESLIE H. WARNER has been elected president of Automatic Electric Co. and will serve as chief executive officer of the manufacturing and sales division of the General Telephone System, it was announced on Nov. 8 by General Telephone System's president, Donald C. Power.

As a result of the merger of Theodore Gary & Co. into General Telephone Corp., the manufacturing division of the General Telephone System now includes Automatic Electric Co., Leich Electric Co., Alphaduct Wire & Cable Co., and their affiliated sales and service companies in this country; Automatique Electrique, S. A., Antwerp, Belgium; Autelco Mediterranea S.A.T.A.P., Milan, Italy; and Automatic Electric (Canada) Ltd., Brockville, Ontario, Canada. Distribution of the products of these companies outside the United States and possessions is handled by International Automatic Electric Corp. and its affiliated sales and service companies throughout the world.

Mr. Warner was associated with Automatic Electric Co. for 17 years prior to joining the General Telephone System last year as president of Leich Electric Co. and its wholly owned subsidiary, Leich Sales Corp. Mr. Power stated that because of Mr. Warner's familiarity with and experience in the manufacturing and sales companies of both Theodore Gary & Co. and General Telephone Corp., he is especially well qualified to handle the many complex problems involved in integrating these companies as a result of the Gary-General merger.

Charles S. Cadwell, who served as president of Automatic Electric Co. prior to the Gary-General merger, has been elected a vice president of Automatic Electric Co. and president of International Automatic Electric Corp. In his new capacity, Mr. Cadwell will direct the activities of Automatic's manufacturing subsidiaries in Canada, Belgium and Italy, and sales and serv-



L. H. WARNER

D. H. DEAVER

L. M. WELLS

C. S. CADWELL

J. J. DOUGLAS

D. C. GIBSON

E. G. BENOIST

M. F. SHANAHAN

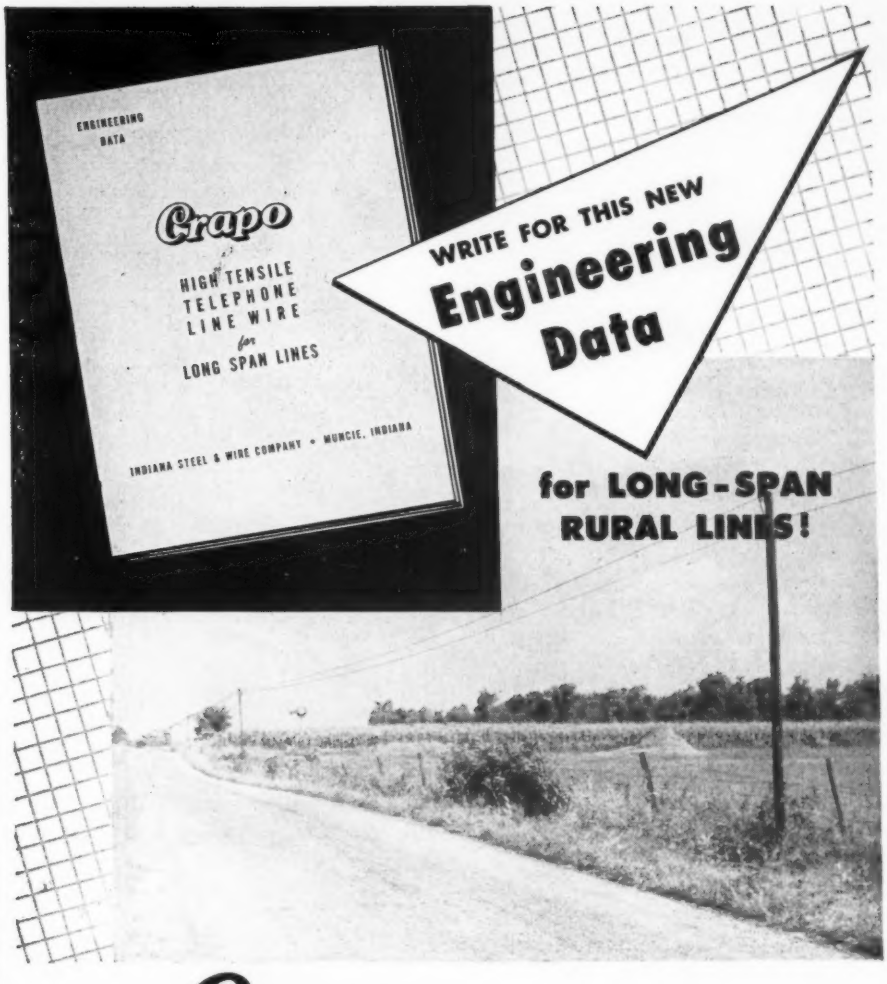
ice operations throughout the world other than in the United States and possessions.

At the same special meeting of the board of directors of Automatic Electric Co., John J. Douglas, formerly vice president and controller, was elected vice president and treasurer, and Edmond G. Benoist was elected vice president and general commercial manager. Martin F. Shanahan was appointed controller of the company.

Mr. Warner announced the following further organization changes:

Leon M. Wells was elected president of Leich Electric Co. and DeWitt C. Gibson was elected president of Leich Sales Corp. at special meetings of the boards of directors of these companies held on Nov. 8. Both companies are wholly owned subsidiaries of General Telephone Corp. Mr. Warner also announced that Darwin H. Deaver has been elected president of Automatic Electric Sales Corp.

Mr. Wells started his career in the


ENGINEERING DATA
Crapo
HIGH TENSILE TELEPHONE LINE WIRE for LONG SPAN LINES
INDIANA STEEL & WIRE COMPANY • MUNCIE, INDIANA
WRITE FOR THIS NEW
Engineering Data
for LONG-SPAN RURAL LINES!

SPECIFY *Crapo* HIGH-TENSILE TELEPHONE LINE WIRE FOR LOWER OVERALL COST

Crapo HTL-85 INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.

For Medium Long Spans

Crapo HTL-135 INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.

For Longer Spans

Crapo HTL-190 INDIANA STEEL & WIRE CO. MUNCIE, INDIANA U.S.A.

For Extra Long Spans

● FEWER pole structures are required where *Crapo* High-Tensile Line Wire is used in building rural telephone lines. This means substantial savings in time, labor and material. There are fewer holes to dig and poles to set, less material to be handled, installed and connected — all of which contribute to lower overall construction costs.

Crapo High-Tensile Line Wire also makes for lower maintenance costs. Its superior tensile strength offers increased resistance to ice and wind loads . . . provides a greater margin of safety. Heavy galvanized coatings assure dependable, lasting protection.

For maximum savings in the construction and maintenance of rural telephone lines, specify the *Crapo* Telephone Wire which best fits your requirements.

LATEST ENGINEERING DATA, including Stringing Sags and Tensions, Staking Tables and Guying Tables for Heavy, Medium and Light Loading Districts, are now available. Write today for your copy of Data Book No. N-53.

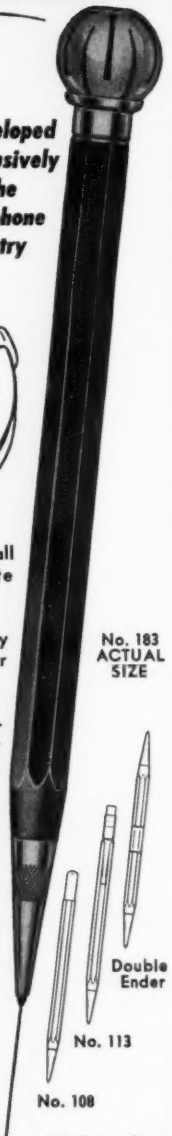
INDIANA
STEEL AND WIRE CO., MUNCIE, IND.

The Standard of the Telephone Industry

DUR-O-LITE
DIALING PENCIL

Developed Exclusively for the Telephone Industry

- **QUIET DIALING . . .** Stainless steel dialing-ball segmented to eliminate metallic tone.
- **CAN'T SCRATCH . . .** Dialing-ball revolves freely . . . won't deface dial or finger-wheel.
- **STURDY . . .** Nickel-silver base of dialing tool permanently mounted upon bakelite barrel of pencil.
- **DEPENDABLE WRITING** Lead held firmly in writing tip . . . no side-slap . . . no back-lash.
- **BIG LEAD CAPACITY** Leads feed consecutively, one after another . . . reloading frequency minimized.
- **CHOICE OF LEADS . . .** Dur-O-Lites are provided with mechanisms for either standard diameter (.046") leads or extra thin (.036") leads.



Other styles for the industry: Traffic Pencil No. 108 (= B.S.S. No. 8-B) for manual boards; Clerical Pencil No. 113 (= B.S.S. No. 13-B); Double-Enders, with choice of 2 colors of lead in either end; Leads all grades and colors.

Write for samples and quotations on Company letterhead. Please indicate styles and probable quantities required.

DUR-O-LITE
PENCIL COMPANY
Manufacturers of Fine Mechanical Pencils
MELROSE PARK, ILL. • TEL. FILMORE 4-7600
(On the edge of Chicago)

Independent telephone industry when he joined the installation department of Automatic Electric Co. in December 1918. During the course of his association with Automatic, Mr. Wells became thoroughly experienced in quality control, inspection work and the supervision of manufacturing of all types of communications equipment. His last position with Automatic was as general superintendent from which he resigned in February 1948 to join Leich Electric Co. as vice president in charge of manufacturing.

Mr. Wells became vice president and general manager of Leich Electric Co. in February 1953 and his present election to the presidency recognizes the many contributions he has made to the growth and development of Leich.

Mr. Gibson joined Leich Sales Corp. in November 1943 after several years of association with the Armstrong Cork Co. During the past 12 years he has progressed steadily in the Leich Sales organization, and was elected vice president and general sales manager in November 1950.

Mr. Gibson is widely known in the Independent telephone industry and has traveled extensively throughout the country during his years of sales work. In his new position he will direct all operational activities of Leich Sales Corp.

Mr. Deaver joined Automatic Electric in 1945 after successful experience in the investment banking field in New York and Chicago. Since joining the company, he has held a succession of responsible administrative posts, and was elected vice president and general manager of Automatic Electric Sales Corp. in March of this year.

In his new position, Mr. Deaver now assumes complete direction of Automatic Electric Sales Corp., including its branch offices and affiliated sales organizations.

Four Wheel Drive Company Has Equipment Leasing Plan

An exclusive arrangement whereby utility companies may lease any type of Four Wheel Drive Auto Co. line maintenance and construction equipment at a low monthly rate has been announced by the company, whose headquarters are at Clintonville, Wis.

Under the FWD plan, any type of truck for telephone or electric companies may be leased for a three or five-year period. At the end of the lease term, the utility company may purchase the equipment outright by paying 5 per cent of the original cost, may continue to lease the unit at 3 per cent a year, or may trade in the equipment on a new truck with a new lease arrangement.

The FWD plan has been developed as a result of the utility company trend toward leasing instead of buying line maintenance and construction equipment.

All sizes of FWD utility trucks are available under the lease plan and any desired equipment may be included in the original lease price.

For instance, an $11,000 truck with utility line maintenance body and folding hydraulic derrick and digger can be leased by a well-rated utility for as little as $220 a month on a five-year plan. The same unit can be obtained on an accelerated three-year lease at a somewhat higher monthly cost.

Then, if the unit is traded for a similar new truck at the end of the lease period, even lower monthly lease rates result, enabling the utility to maintain the latest line maintenance and construction equipment at all times.

Complete information about the FWD utility equipment lease arrangements may be obtained by writing to Four Wheel Drive Auto Co., Clintonville, Wis.

Answers to Questions On Page 32

(1) All such tickets are to be held at the position.

(2) All reports of NC, No Trunk, BY (if customer has requested the operator to make attempts) ext. BY and LK; also, all initialed reports of DA (if attempts have been requested,) OD, ext. or room telephone DA and NRG party paged, and all reports of U few, LK few, WT few, etc., on which the operator did not leave word. All other delayed tickets are to be sent to TX.

(3) The operator should leave word at the called telephone, clear the circuit, and say to the calling party, "I will call you when Mr. (called party) reports," and release the calling line.

(4) Yes. When he specifies a time say, "Thank you. I will call you at (time and day specified)," and release the calling line. Say to the called telephone, "I will call again at (time and day specifield)," and clear the circuit.

(5) The operator should enter the information on the ticket, give the report, if necessary, and proceed as directed.

American Creosoting Company

Pioneers in Forestry as well as Wood Treatment

• It has been estimated that the modern wood preserving industry, pioneered by the American Creosoting Company, has saved the nation the equivalent of 500 million acres of forest lands in the past 50 years. Great as this force has been, wood preservation alone was not enough to stem the tide of forest exhaustion.

The greatest conservation force is the forester and his science of forestry.

Just as it was the pioneer in wood preservation, American Creosoting Company was a pioneer in forestry. While the science of forestry was in its infancy, American Creosoting Company took a practical interest in the advancement of the science by purchasing large forest areas to make them available for the study and advancement of the practices of good forestry.

In this vast woodland laboratory, known as Satilla Forest, Amcreco has helped develop and carry out many of the scientific practices that are now in widespread use throughout private, industrial and government owned timber lands.

With this progressive policy of good forestry practice combined with constantly improving treatment, American Creosoting Company helps keep the cost of treated materials at a minimum consistent with the quality you require. To learn how this affects you, let us quote on your needs.

AMERICAN CREOSOTING COMPANY

INCORPORATED

Shreveport Creosoting Company
Colonial Creosoting Company
Federal Creosoting Company
Indiana Creosoting Company

AMCRECO
LOWRY PROCESS
CREOSOTED WOOD

Georgia Forest Products Company
Gulf States Creosoting Company
Georgia Creosoting Company
Kettle River Company

LOUISVILLE 2, KENTUCKY

12 FIELD SALES OFFICES TO SERVE YOU

PART 2 JUST PRINTED . . .

"Stability in Carrier Frequency Oscillators"

Sherman B. Weiner, Carrier Engineer, completes, in the November issue of "The Carrier," his discussion begun in the October number.

This handy-size (5½"x8½") pamphlet contains 8 pages, generously illustrated. It is of special interest to operating company engineers and technicians whose daily work is concerned with the principles of carrier.

Copies have been distributed to a known list of such technical men. If you haven't received one, send a postcard request to your nearest Stromberg-Carlson branch office. We also have a few remaining copies of the October issue, obtainable while they last.

STROMBERG-CARLSON COMPANY
A DIVISION OF GENERAL DYNAMICS CORPORATION
Rochester 3, N. Y.

News on New Products

PLASTIC HANDLE KNIFE—Mathias Klein & Sons announces the availability of a new skinning knife with a plastic insulated handle. The blade is 3 inches long and of highest quality cutlery steel, carefully tempered. Total length of knife is 8 inches.

Handle is red plastic and provides excellent insulation and comfortable grip. Back of blade is ground flat for scraping. Re-designed bevel of blade overcomes build-up of insulation when skinning weatherproof insulation. Handy ring in the handle for fastening to snap. Request NP454.

•

PLIERS WITH PLASTIC HANDLES—Mathias Klein & Sons also announces the availability of dipped plastic handles on any Klein pliers. These handles provide a heavy plastic coating that is comfortable and resilient to the hand—that will not come off in use and yet may be removed easily if desired.

They are available in standard colors—red, blue, black, yellow or green. Other colors may be had on special order. Request NP455.

•

EARTH AUGER—A new style earth auger for boring holes for guy anchors and other line construction is now being manufactured by the A. B. Chance Co. The auger is heavily constructed to withstand the rough treatment augers receive on a line truck.

The new auger has a tripping mechanism so that the dirt can be easily dumped from the blades. The steel blades have sharpened cutting edges for

boring into the earth. Small roots and other obstructions are cut through by the blades.

A reamer extension blade adjusts so that several sizes of holes can be drilled

TELEPHONY PUBLISHING CORP.
608 S. Dearborn St.
Chicago 5, Ill.

Please have the manufacturer send me without obligation the literature indicated by the following numbers:

NP454_____; NP455_____; NP456_____; NP457_____;
NP458_____; NP459_____; NP460_____; NP461_____;
NP462_____; NP463_____.

Name ..... Title .....

Company .....

Street .....

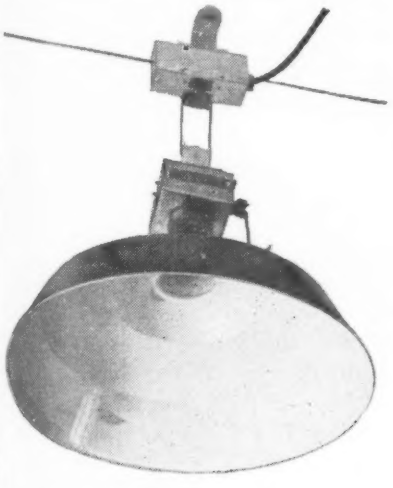
Town and State .....

11/19/55

using the same auger. Chance Earth Augers have telescoping handles for digging holes up to 12 feet deep. Request NP456.

•

CABLEMATIC LIGHTING — A completely new approach which produces a great increase in lighting efficiency is



announced by Wil-Son Mfg. Co., and known as Cablematic lighting.

Cablematic is a simple and fool-proof elevating mechanism, which provides counterbalanced elevating, and lowering of the fixture to eliminate ladders. One of the many extremely novel features of Cablematic is the automatic elevating of the fixture after it is cleaned.

Ladders and ladder accidents are eliminated, and with cablematic there is no chance of a fixture ever falling. With Cablematic you simply pull down fixtures for cleaning, while automatically the cleaned fixture will re-elevate. When a dirty fixture comes down a clean fixture goes up. Total time for elevating and lowering a fixture will not exceed 25 seconds, and one man maintenance is all that is required, the company states.

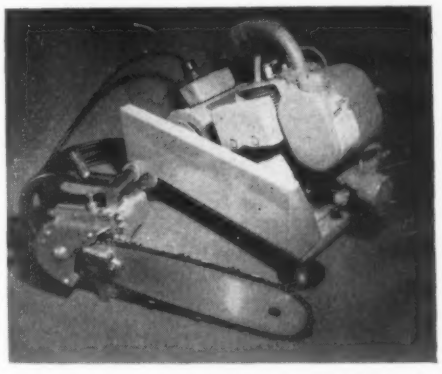
With Cablematic a single cable is used on an entire line of lighting fixtures. Both ends of the cable are positively anchored, and enough slack is provided to lower only one fixture. Thus any number of fixtures can be used on this one cable, and a single counter weight is all that is required.

When the counter weight is pulled down all of the fixtures will be in operation. When the fixture is pulled down the counter weight goes up. When the second fixture is pulled down the first fixture becomes the counter weight and it goes up. With this new approach very little cable is required, and as the cable lays along side of the electrical raceway, there is no cobwebbing of the ceiling, and no requirement of special hanger fittings and brackets. Request NP457.

•

CHAINSAW—Recently introduced by Trailite Corp. is a ruggedly constructed (ball-bearing throughout) ¾ hp chainsaw.

It is designed for nurserymen and tree surgeons and those who trim utility rights of way, who must climb up in



and trim trees, both because of its light weight, and because the handle construction permits operation of the quick-release thumb switch, even when wearing mittens. The saw operates from any source of 110-volt, 60-cycle, ac current. Request NP458.

•

STEEL FILES—A new deluxe line of

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Stainless Steel Lashing Wire

–gives a neat and lasting job

• PAGE Stainless Steel Lashing Wire is ideal for lashing insulated conductor cables to a strand messenger—either by Neale or Western Electric machine. Coils of lashing wire are tailored to fit machine specified. Use of PAGE Stainless Steel Lashing Wire insures a far neater and longer lasting job than produced by old-fashioned methods.

AVAILABLE IN 3 GRADES

Type 430 • for use with galvanized steel messengers
Type 302 • for use with stainless steel messengers
Type 316 • for use under severe corrosion conditions

All types can be furnished in two sizes—.065 and .045

For full information about PAGE Stainless Steel Lashing Wire, write to our Monessen, Pa., office

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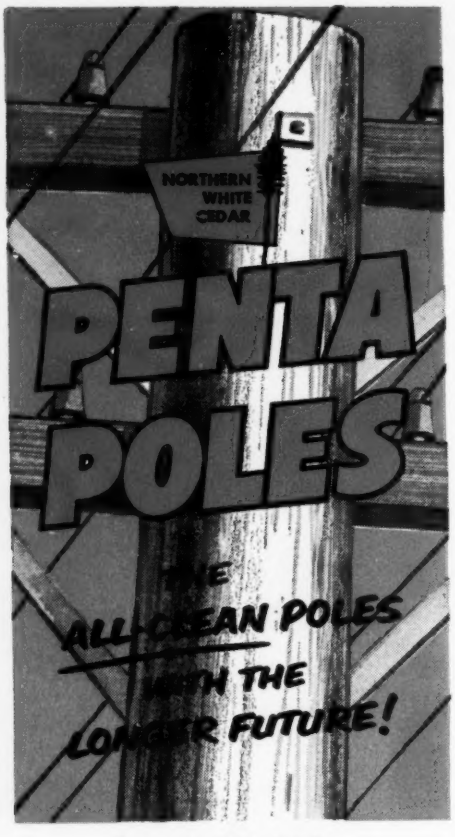

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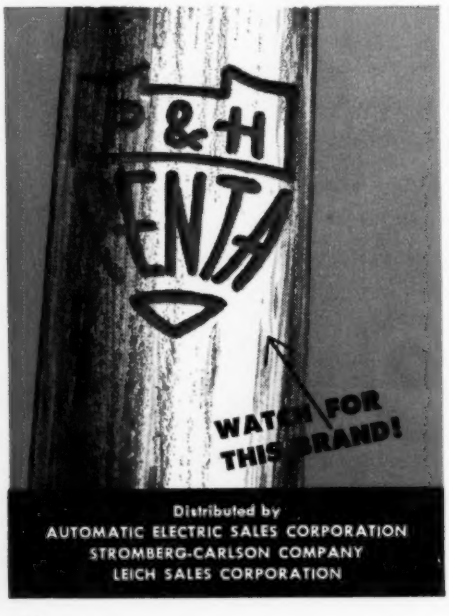

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STROMBERG-CARLSON COMPANY
LEICH SALES CORPORATION

steel files featuring four operating improvements for handling active and master-deck tab cards was announced recently by Diebold, Inc. In addition to operating advantages, the new Diebold files establish a new low in cost for tab card filing equipment. The accompanying cut shows these features:

Fig. 1. Positive compressors of exclusive Diebold design hold cards flat and keep them in perfect shape for use in sorting machines. (While not recommended as standard practice, compressors can be adjusted to hold cards so tightly that they will not fall out if drawer is inverted.)

Fig. 2. Chrome finished solid handles provide positive grips for handling drawers safely. They harmonize with standard chroma-gray and olive finishes.

Fig. 3. Nylon bearings assure smooth bind-free drawer operation for a lifetime of active use. No lubrication is needed. Nylon can't rust and resists wear indefinitely.

Fig. 4. A comfortable easy-grip carry-bar at rear makes it easy to transport loaded drawers without danger of spilling cards.

Diebold files can be expanded easily, either vertically or horizontally, by adding standard two-drawer units as needed. In addition to reducing equipment investment, Diebold tab card files also reduce space requirements.

Rigid batteries of Diebold steel files are formed by locking cases together vertically, side-to-side and back-to-back. No tools are needed. Horizontal tie-links and vertical locking-keys are inserted easily as files are stacked. Fabricated from reinforced heavy-gauge steel, loaded files can be stacked ceiling high without causing drawer-bind. Request NP459.

•

WIRES AND CABLES—A new line of telephone wires and cables has been announced by the Anaconda Wire & Cable Co.

The line includes aerial and duct cables, direct burial cables, self-supporting cables, and rural and urban distribution wire.

All but one of the cables are insulated with polyethylene, which has exceptional electrical characteristics that contribute to minimum transmission loss. The urban distribution wire is insulated with polyvinyl chloride.

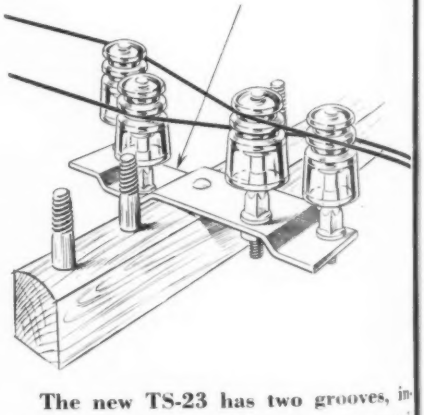
The entire line of cables is color-coded according to industry standards.

The Type ATC-AD aerial and duct cables are recommended for telephone exchange areas, rural and suburban communities, railroad communications systems and replacement of open-wire installations. They are easy and economical to install and require much lighter messengers than are generally used, it is said.

The direct-burial cables, Type ATC-DB, are designed for direct burial in any region under adverse soil conditions. They are also suitable for application adjacent to power circuits because of their high dielectric strength and low shield resistance. Request NP460.

•

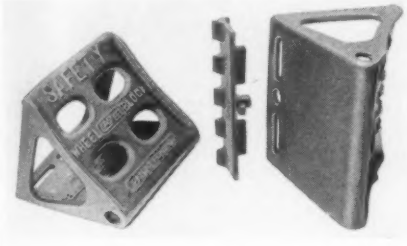
INSULATOR—Introduction of a new communications insulator, Hemingray TS-23, designed by the Bell System Laboratories, has been announced by Kimble Glass Co., subsidiary of Owens-Illinois Glass Co. It replaces the old style CSC-22 and is specifically designed for carrier circuit use on all "point" type transposition hardware and at intervening non-transposition poles.



The new TS-23 has two grooves, increasing its versatility for transpositions. The addition of the second groove makes it practical for use on new transpositions as indicated in the illustration. The entire assembly shown here takes only the cross-arm width of one conventional pin, and transposition may be installed on existing cross-arms without crowding. Center to center spacing of wires is 4 inches. Minimum clearance between wires at the cross-over is 1¼ inches. Request NP461.

SAFETY BLOCK—A recently designed safety tool for the blocking of car, truck or trailer has been introduced by Calumet Steel Castings Corp.

This is a special alloy steel casting that combines great strength with light weight and compact size. It is handy to use, easy to set or remove, and it holds fast on every surface, with ample factor of safety for the heaviest equipment.



The unique design affords stiffening members at the rear corners, which serve as convenient handles as well. A curved face provides maximum contact with the tire, and even distribution of the load. The large flat base gives maximum support in soft footing, while the integrally cast gripper teeth at the rear edge assure holding power on ice or snow.

It is also listed with removable alloy steel heat-treated gripper teeth or calks to facilitate the replacement of worn teeth, and for use without teeth on asphalt or other soft paving.

Its compact size (7 inches x 9 inches x 9 inches) and reasonable weight (12 pounds) make it a practical item to be carried in the cab or tool box of the truck. When used at shipping docks, these wheel blocks may be conveniently chained to prevent pilferage.

Integrally cast lettering also serves as a means of identification or advertising, and is available at slight additional cost. Request NP462.

•

AUTO SAFETY BELTS—The Suttle Equipment Co. announces that it has been appointed exclusive distributor in the telephone industry for Rupert auto safety belts for passenger cars and truck and tow straps.

The safety belts for passenger cars conform to CAA standards and aviation type construction and come in 10 colors, plus white, to harmonize with upholstering of cars. The belts, which attach to the car floor or frame, can be installed by anyone. Hardware is included with the belts.

Passenger car belts are made of 2-inch preshrunk nylon webbing and have a tensile strength of over 3,600 pounds. The company recommends two individual belts for the front seat and

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The cartons are easier to handle than loose coils. They can be stacked higher without danger of falling and the wire on the bottom will not be crushed or bent. Space is saved, inventory taking is simplified, and the possibility of injuries to workers from tumbling coils is removed.

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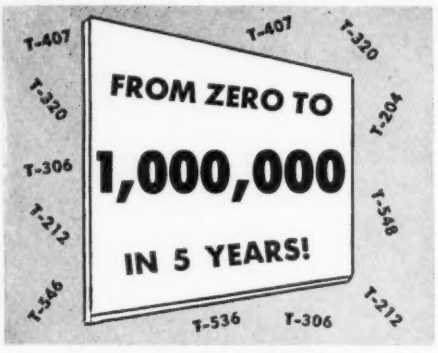
GENERAL SYSTEM



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EVERSTICK ANCHOR CO.
FAIRFIELD, IOWA

one long double belt for the rear seat.

Belts for trucks have been approved by racing associations and conform to CAA standards for aircraft use. They have over 8,200-pound tensile strength. The truck belt is made of 3-inch preshrunk nylon webbing and the quick-release action buckle assembly with the nylon webbing construction has a tested strength of over 15,000 pounds.

The metal-to-metal buckle contacts assure maximum safety and side adjustment of belt and shoulder harness.

The Rupert nylon tow strap has a strength of over 6,000 pounds and may be used for all towing jobs. It snaps on and off of cars and trucks and the heavy duty clips prevent marring and will not rattle, rust or scratch.

It is said that the elasticity of the tow strap keeps bumper clips snug tight with no slack or shock during towing operations. Request NP463.

R. H. Barger Retires After 44 Years with Stromberg

Ralph H. Barger on Sept. 30 closed out a career of more than 44 years in the telephone industry, and retired from his position as manager of installation and customer service in the telephone division of the Stromberg-Carlson Co., a division of General Dynamics Corp.

In tribute to his long service to the industry, all of it in the employ of Stromberg-Carlson, his friends and associates the night before his retirement gathered in Oak Hill Country Club to wish him well, and to shower him with gifts. Incidentally, the party also celebrated his 65th birthday. Among those who attended were a number of national leaders in the telephone industry.

Probably the most gratifying of all the things he received at the party was a thick portfolio of letters, telegrams and other messages of good will from literally hundreds of men and women with whom he had worked, and whom he had served, during his 44-year association with Stromberg-Carlson.

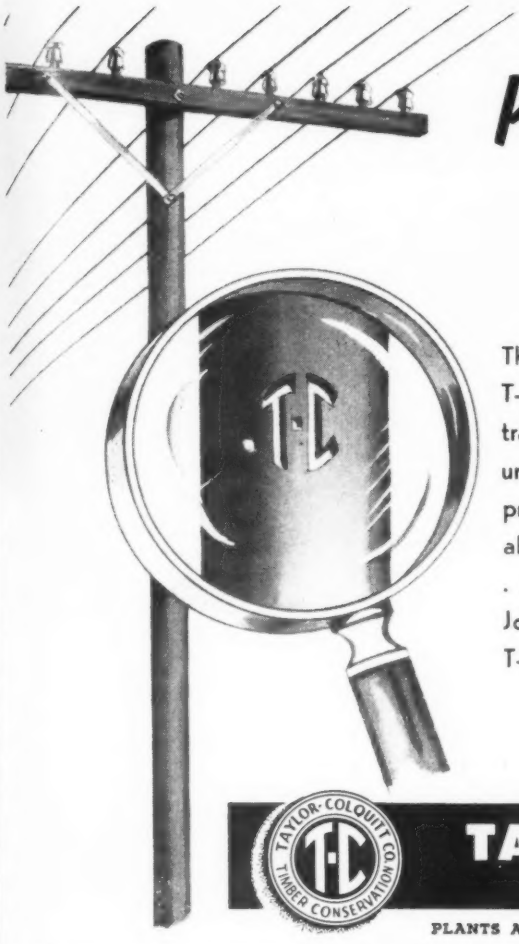
Another item he received was a certificate of life membership in the Telephone Pioneers of America, presented to him by Richard Walrath, equipment engineer of the Rochester (N. Y.) Telephone Corp. and a past president of the Genesee Chapter of the Pioneers.

Mr. Barger entered the employ of the Stromberg-Carlson Co. in 1911, working in the switchboard department. He transferred to the engineering department about seven years later, and in 1921 became sales engineer. In 1940 he was made telephone sales manager; in 1945 he became assistant commercial sales manager; in 1949 he was appointed commercial sales manager, and he was advanced in 1954 to the position from which he retired.

For many years he represented Stromberg-Carlson in hundreds of state, regional and national telephone association meetings, particularly throughout the East and South. He also supervised or was connected with installations of Stromberg-Carlson central office equipment for Independent telephone companies.

Ralph A. Barger (left), who retired after 44 years with Stromberg-Carlson Co., shown receiving portfolio of retirement well-wishes handed him by William A. Kern, executive vice president, Rochester (N. Y.) Telephone Corp.

A. I. Obstfeld was recently elected president of Markwell Mfg. Co., Inc., producers of Markwell staples and staplers. One of his assistants is to be Mort Newburg, formerly regional sales manager, Doeskin Paper products, Inc.



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Vapor-Dried Poles

That's what T-C pole users do. Here's why . . . they know that T-C's exclusive Vapor-Drying process permits more uniform penetration of creosote or penta. They know that this deeper, more uniform penetration enables Vapor-Dried poles to retain their preservative longer . . . thus making them the most durable available. They know they can install T-C poles . . . one or a thousand . . . and get long years of trouble free service from each one. Join the ever-growing list of telephone companies who specify T-C Vapor Dried poles and put 'em up and forget 'em.

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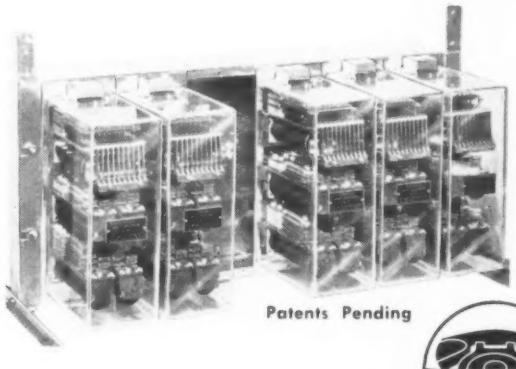

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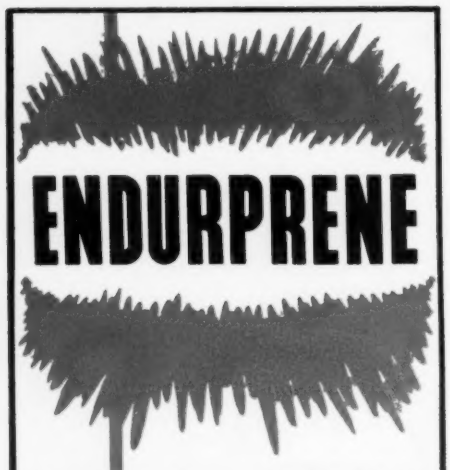

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Helpful Literature

REVENUE BUILDERS—Stromberg-Carlson has issued a folder containing bill enclosures and brochures describing various telephone services and facilities which telephone companies can use in merchandising and selling programs. The direct-by-mail pieces feature Stromberg-Carlson products.

Included is advertising material on such subjects as colored telephones, extension and wall telephones, plug-in telephones, hands-free telephones, two-line telephones, PBX switchboards, key turrets and convenience systems, etc.

Also included is a price list for the material. Request HL 256.

•

POLE LINE HARDWARE—The hundreds of products made by Hubbard & Co. are described and illustrated in a large new catalog, just published.

Standard pole line hardware and electrical specialties for communication line and power line construction are covered, and are indexed.

Tables of weights, measures, and material properties are included in the catalog, which contains 260 pages, with an embossed cover. Request HL257.

•

ELECTRIC PLANTS—The new issue of *Power Points Digest*, company publication of D. W. Onan & Sons Inc., describes a wide variety of Onan electric plant installations in telephone companies throughout the United States.

How nine Onan-equipped trailer units supplied emergency electric power for Carolina Telephone & Telegraph Co. exchanges during the hurricanes is told in a two-page spread in this pocket-sized booklet.

How the Southern New England Telephone Co. put into service a custom-built trailer completely equipped for emergency manhole work is described and illustrated in an interesting feature. An Onan 3,500-watt air-cooled electric plant provides "city-type" electricity for operating pumps, blowers, floodlights and other electrically powered maintenance equipment.

A complete description of a unique method of telegraph delivery service inaugurated by Western Union is another feature. How an Onan six-volt battery charging electric plant, running sixteen hours a day, helps speed delivery of telegrams provides absorbing reading.

How Onan standby electric plants provide dependable insurance against the possibility of power outages is shown in articles describing these installations in the Central Telephone Co.'s exchange at Le Mars, Ia., and United Telephone Co. at Russell, Kan. Request HL258.

•

TEST EQUIPMENT—A new catalog, R36A, illustrates and describes the complete line of test equipment available from Weston Electrical Instrument Corp. It includes all instruments for servicing TV, radio and other communications equipment, as well as all industrial electronic and electrical equipment. Request HL 259.

•

STUDY OF WOOD POLE PRESERVATIVE—United States Steel's Chemical Research Laboratory has completed a

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Please have the manufacturer send me without obligation further information on the products described in the following numbers:

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study on why the use of a preservative for wood poles extends their life 35 years or longer.

The results of what happened to the preservative in a 23-year-old Class 5 Southern Yellow Pine pole, treated originally with eight pounds of creosote per cubic foot of wood, is concisely reported on in non-technical language in the attached booklet, "A Report on Pole No. 92159." Request HL260.

•

SURFACE METAL RACEWAYS—The complete line of Wiremold surface metal raceways and fittings is illustrated and described in a new, 132-page "Wiremold Catalog and Wiring Guide" now available. Included in this free catalog are detailed installation instructions for all sizes of raceways, including plugmold multi-outlet assemblies. The Wiremold line of fluorescent and slimline equipment is also covered. Request HL261.

•

POWER DERRICKS — A four-page descriptive bulletin has just been published on Holan Series 3700 power derricks, manufactured by J. H. Holan Corp. The bulletin gives design features and performance data for handling loads up to six-ton capacity. Request HL262.

•

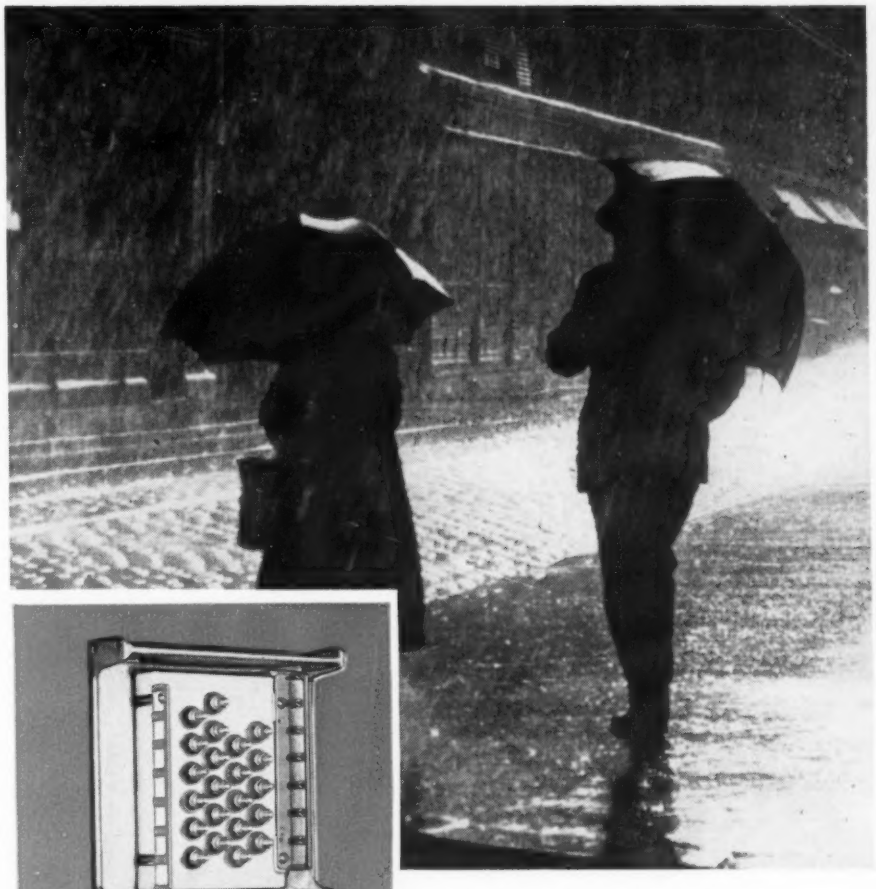
TELEPHONE AND ELECTRONIC EQUIPMENT—The International Telephone & Telegraph Corp. has just issued an attractive booklet featuring the electronic and telecommunications equipment manufactured and furnished through its various subsidiary companies.

Included are descriptions of radio, remote control telephone, cable and wire, television, radar, and other electronic equipment. Also described are the various services rendered by the subsidiaries such as research, advisory export and import, etc. Request HL263.

North Opens West Coast Office and Warehouse

As the result of increasing business on the west coast, North Electric Co., Galion, O., is establishing permanent headquarters for its western region with the opening of a new sales office and warehouse at Salem, Ore.

Designated as Warehouse No. 6, the property will serve as distribution center for nine western states and the territory of Alaska. Official opening date is set for Dec. 1, according to



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Through wind and rain, this rugged, weather-proof cable terminal stays free of trouble. Water can't penetrate the heavy rust-proof zinc cover or the soldered cable-nipple joint. Tight-fitting nuts and over-size washers keep condensation from drop wire-terminal connections. Raised bosses on the glazed porcelain terminal plate prevent a possibility of surface leakage.

Housed in a cast aluminum-alloy box, firmly bolted to a hot-dip galvanized steel bracket, the Type 60-A-gives years of faithful service.

The Type 60-A is reversible and mounts easily on poles or buildings with the six-foot cable stub running from top or bottom. Order from Automatic Electric Sales Corporation, 1033 W. Van Buren Street, Chicago 7. HAymarket 1-4300.

Cat No.	Capacity	Shipping Wt., Lbs.
SA-51	11-pair	14
SA-53	16-pair	17
SA-55	26-pair	21

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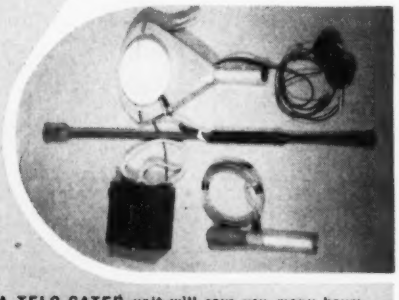
- Locates shorts, crosses, grounds and opens in cable, drops and aerial wire without necessity of climbing poles.
- Cuts trouble shooting time and gas mileage.
- Identifies pairs in cable.
- Locates buried conduit, water and gas pipes.
- Locates concealed wiring between walls in building.



A TELO-CATER unit will save you many hours of line search for trouble spots. It is simple in design, easy to operate, and tone locates line faults exactly.

ORDER DIRECT—All TELO-CATER units are sold with strictest satisfaction guarantee. All orders are shipped direct from the factory. Write or phone for prices and delivery schedule.

CUMMINGS & NOTT
PHILOMATH, OREGON

Among first visitors to the North sales office and warehouse in Salem, Ore., were the officials shown above with D. C. Dye, west coast regional manager. Left to right: Elton Thompson, president, chamber of commerce; Mr. Dye; Russell Pratt, head of Capital City Transfer Co., and Robert F. White, mayor of Salem.

the announcement by D. F. Snyder, North sales manager.

Don C. Dye, manager of North sales on the west coast for several years, will be in charge of the new center. He was transferred to the western region from the Galion office in 1950.

International AE Transfers Luis Pitigliani to Chicago

International Automatic Electric Corp. announces the transfer of Luis Pitigliani from Buenos Aires, Argentina, to Chicago headquarters. In his new assignment, Mr. Pitigliani will serve as staff engineer for the sale and

LUIS PITIGLIANI

installation of telephone equipment of the Automatic Electric Group in the territory consisting of the West Indies, the northern part of South America and Central America. Automatic Electric Group factories are located in Milan, Italy; Antwerp, Belgium; Brockville, Ontario, and Chicago.

A native of Pisa, Italy, and a graduate electrotechnical engineer from Turin University in Italy, Mr. Pitigliani had a wide experience in telecommunications in Europe before joining Automatic Electric in 1939.

After spending a number of months in the factories of the Automatic Electric Group to familiarize himself with their products, Mr. Pitigliani was assigned to Buenos Aires late in 1939 and served there until transferred to his present position in Chicago.

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